NORTH CAROLINA

Medical Journal

Vol. 13 No. 7
July, 1952

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LOOKING AHEAD—FOR HEALTH IN NORTH CAROLINA — NORTON

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Experimental pharmacology is the foundation of rational therapeutics. Through such experimentation, empiricism has been replaced by definite knowledge of how a given drug acts. The Division of Pharmacology of the Lilly Research Laboratories is equipped and staffed to study and evaluate new therapeutic agents.

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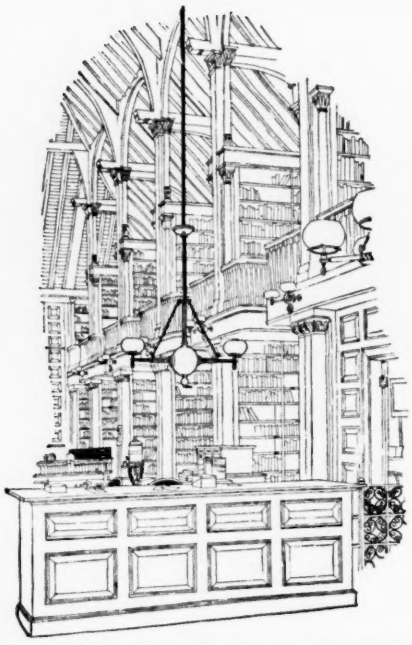

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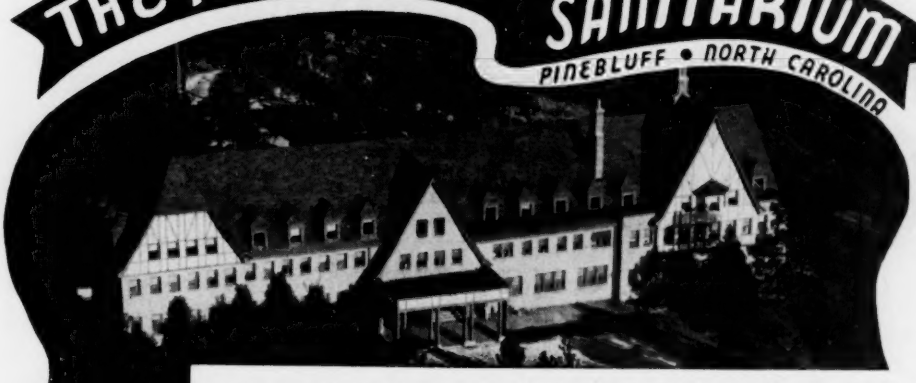

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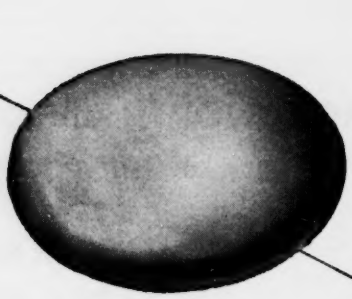

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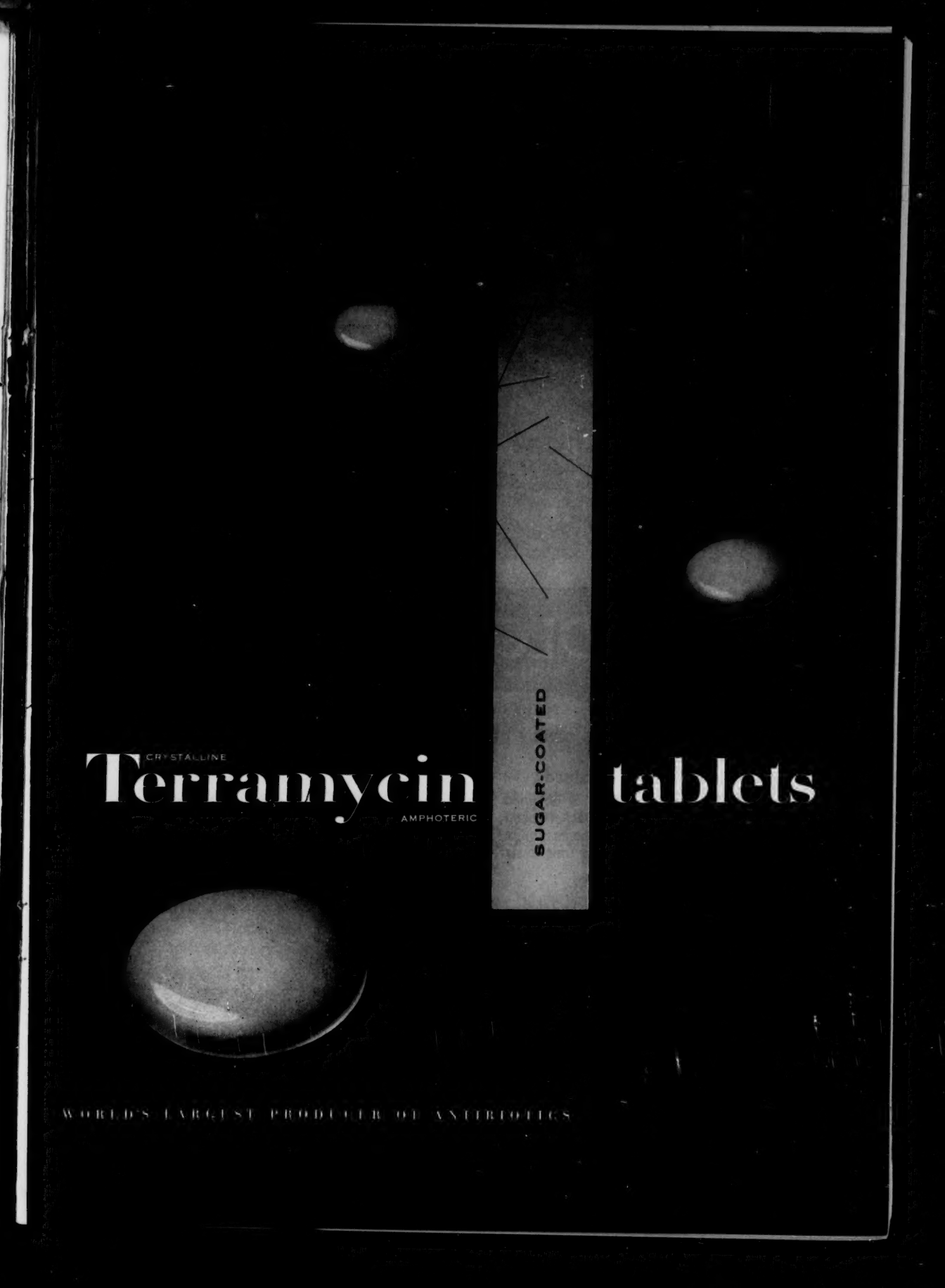
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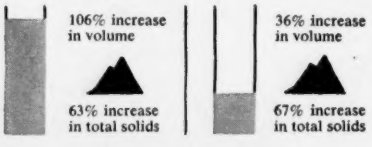

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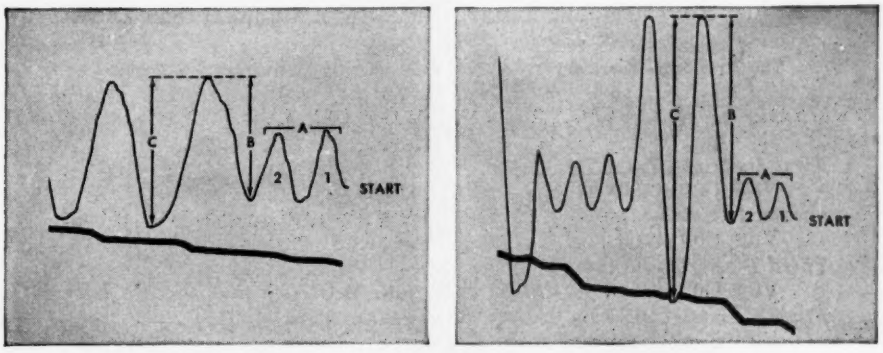

A. Tidal breathing **B. Complemental air** **C. Vital capacity**

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Schwartz, E., *J.A.M.A.* **147**: 1734–1737. Dec. 29, 1951.

Literature available

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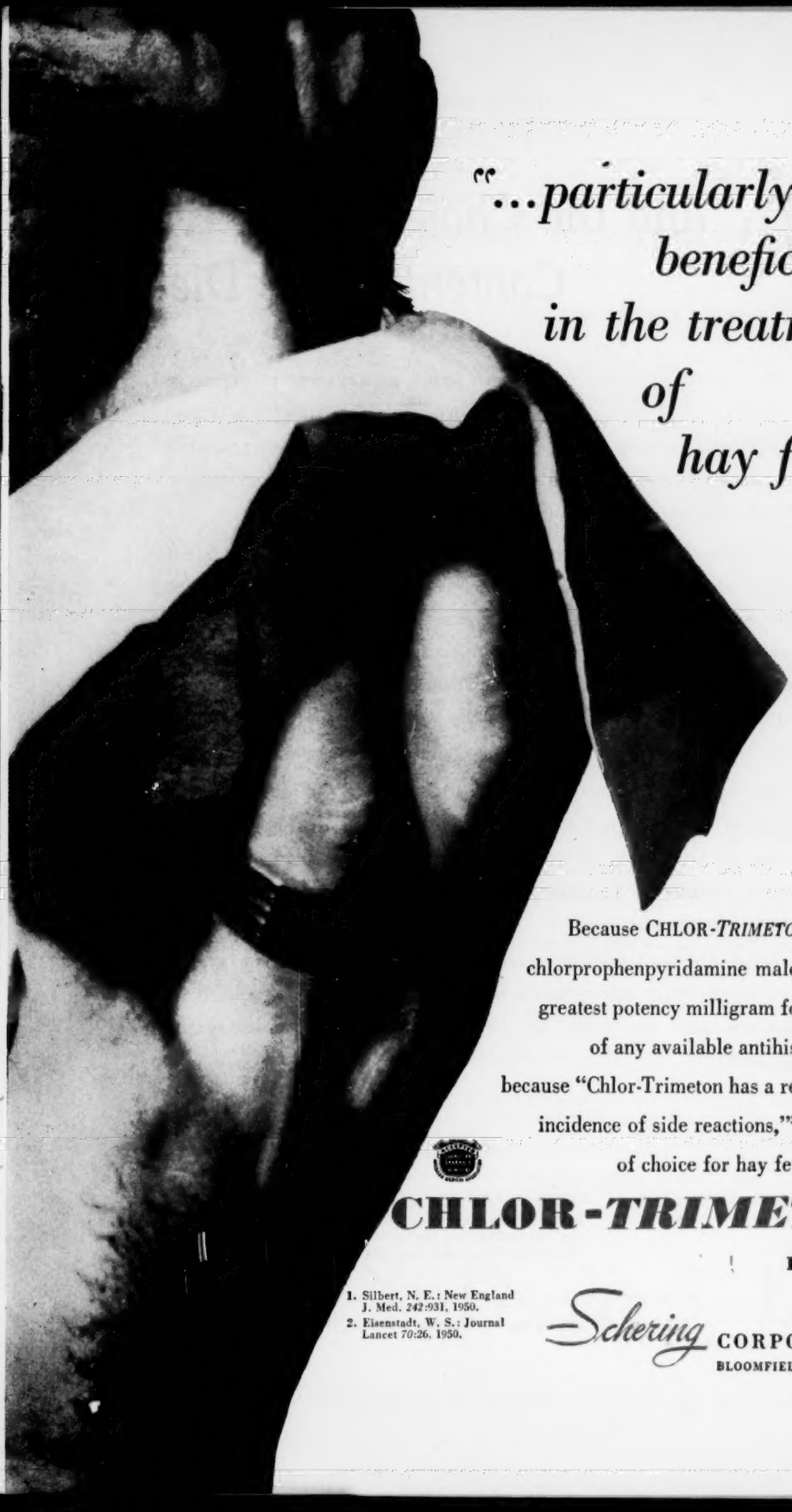

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1. Silbert, N. E.: New England J. Med. 242:931, 1950.
2. Eisenstadt, W. S.: Journal Lancet 70:26, 1950.

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*Hegsted, D. M.; Mann, G. V., and Stare, F. J.: Comments on Cholesterol, Editorial, Postgrad. Med. *11*:454 (May) 1952.

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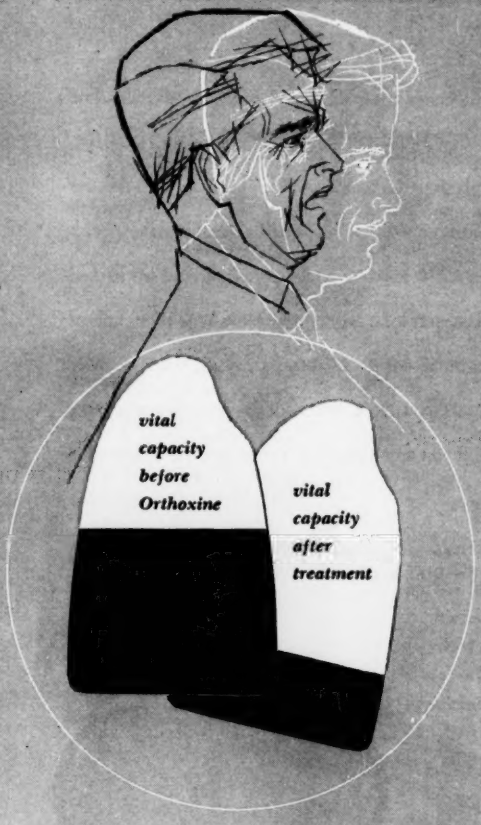

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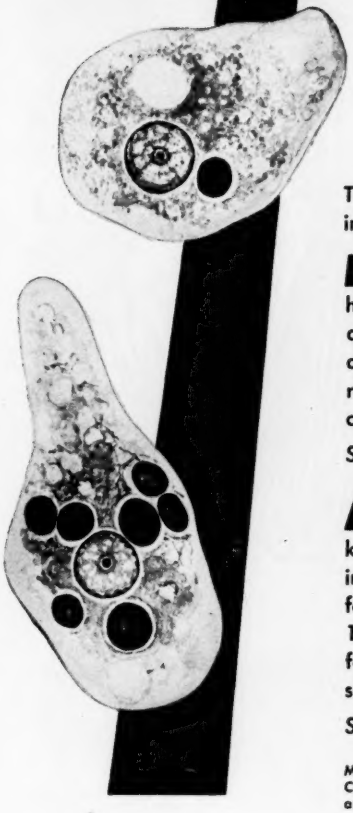

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1. Lindsay, A. E., Gossard, W. H., and Chapman, J. S.: *Dis. Chest*, 20:533, Nov., 1951.
2. Conan, N. J., Jr.: *Am. Jour. Med.*, 6:309, Mar., 1949.
3. Emmett, J.: *J.A.M.A.*, 141:22, Sept. 3, 1949.

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1. *Perloff, Wm. H. (1951), Treatment of the Menopause. II. American J. Obst. & Gynec., 61:670, March.* 2. *Reich, W. J., et al. (1951), A Recent Advance in Estrogen Therapy. I. American J. Obst. & Gynec., 62:427, August.*

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Piperazine tablets

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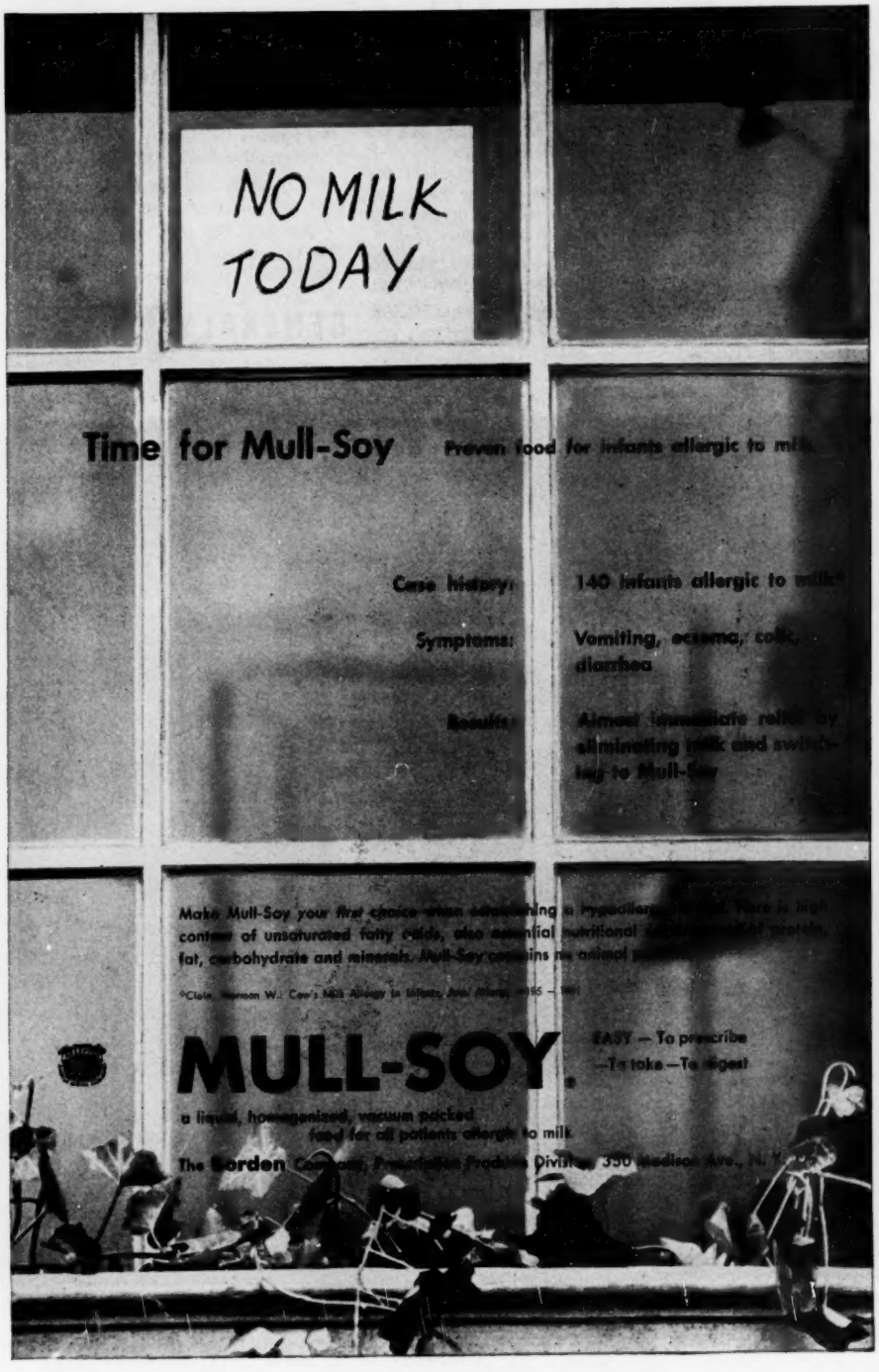
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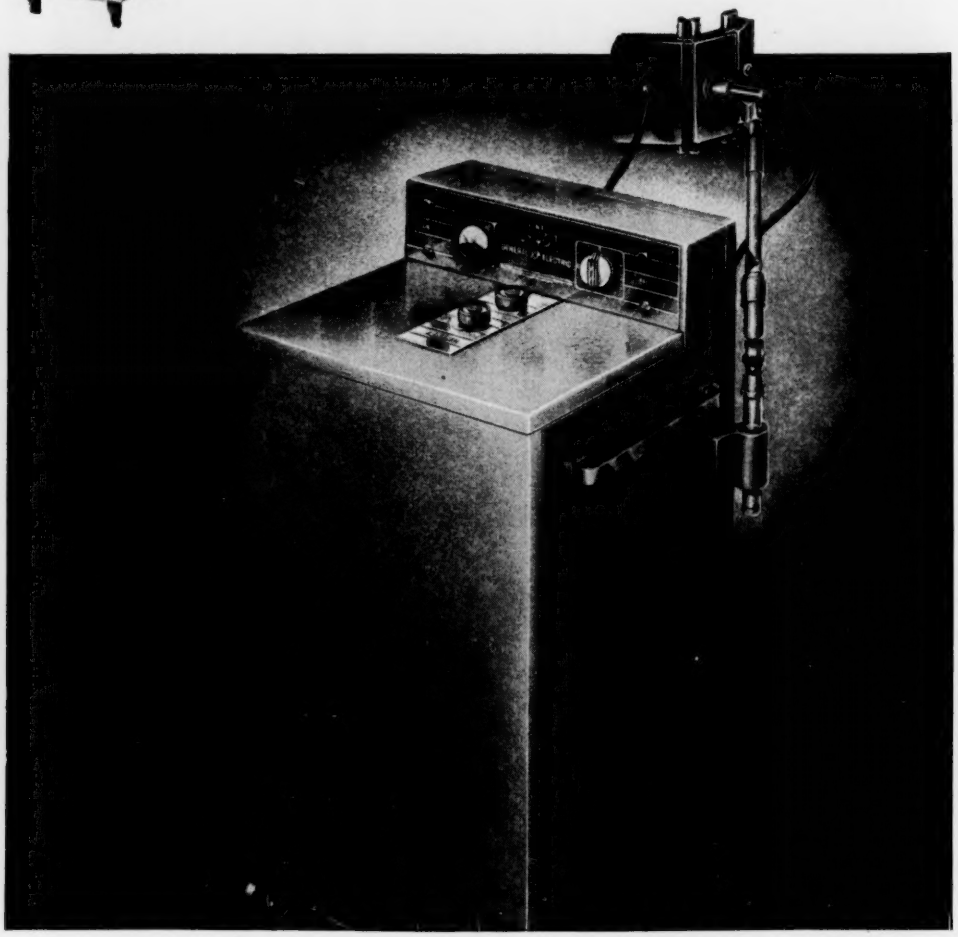

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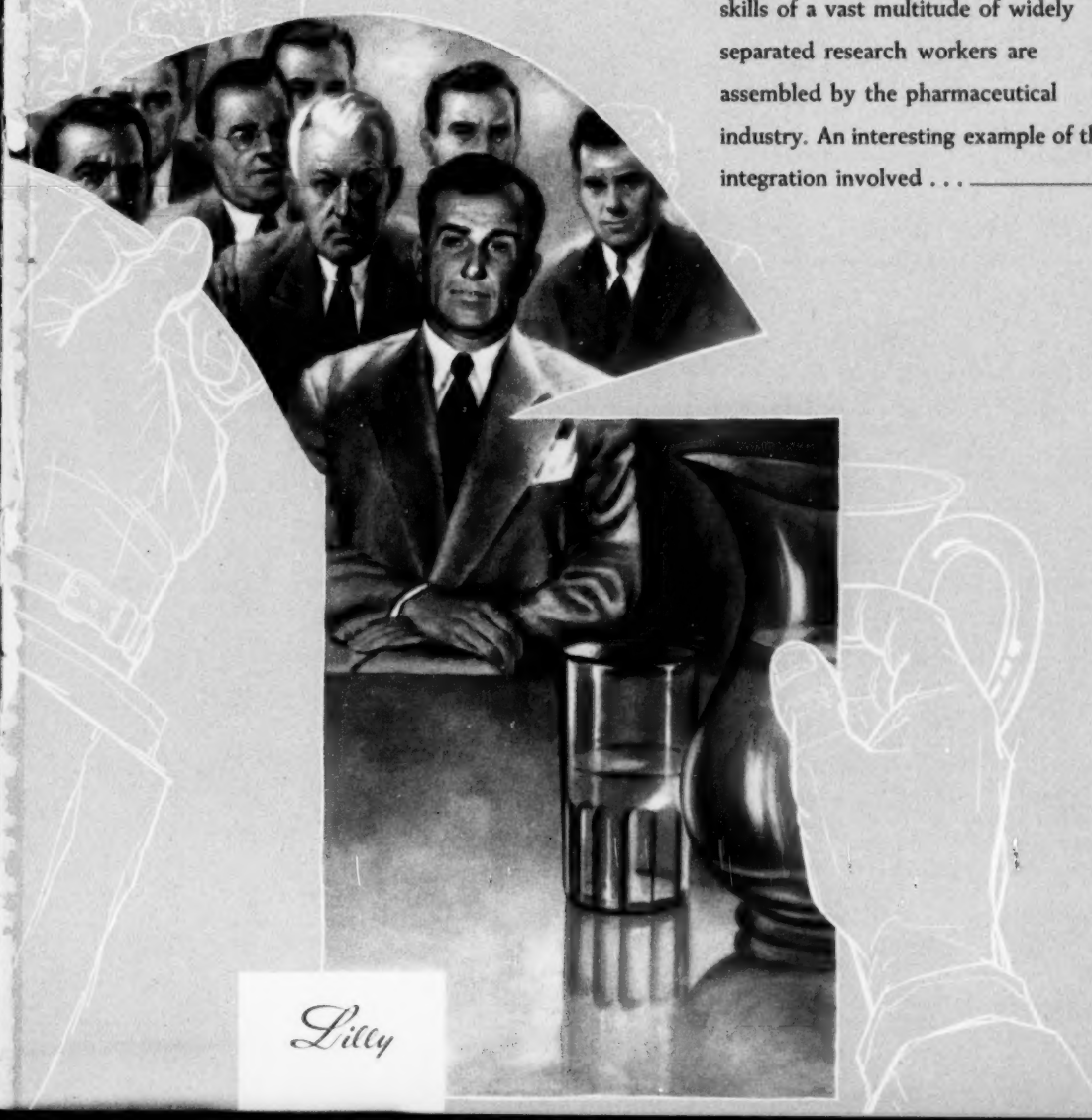
Doctor Harris presents his paper

Among the many demands upon his time and energy are the frequent hospital and medical society meetings which Dr. Harris attends. He never has quite enough time left over for himself. If his prescriptions were less efficient, however, the time he would be forced to spend with each patient would be greater and satisfactory results fewer. To provide more efficient therapeutic agents, the knowledge and special skills of a vast multitude of widely separated research workers are assembled by the pharmaceutical industry. An interesting example of this integration involved . . .



Lilly

. . . ferrets, eggs, and flu

The ferret's ability to drive his prey out of hiding gave his name a special significance when he was used in the laboratory to "ferret out" the elusive influenza virus. From throat washings of influenza patients, investigators recovered a virus pathogenic for ferrets and then demonstrated that antibodies against the virus were produced during convalescence. Other research groups found that the causative strains varied from one epidemic to another. Still others devised a method for removing the virus from the allantoic fluid of inoculated embryonated eggs to provide a practical means of producing ample vaccine. Finally, clinicians, including those with Eli Lilly and Company, were able to establish the preventive value of this material. The problem of varying epidemic strains, however, called for large but flexible production. Eli Lilly and Company shared in a successful trial-run which indicates that the pharmaceutical industry is able to cope with nationwide influenza epidemics in a matter of weeks. Such co-operative undertakings, financed by industry, join the talents of many investigators, lending to their efforts the important purpose of giving man increased freedom from disease.

Lilly ELI LILLY AND COMPANY · INDIANAPOLIS 6, INDIANA, U. S. A.

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LOOKING AHEAD---FOR HEALTH IN NORTH CAROLINA

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RALEIGH

A detailed report of public health activities is being submitted to the president of the Medical Society and the State Board of Health. As has been done the last three years, our time at this Conjoint Session will be used to discuss matters considered of mutual and timely interest to private medical practitioners and to health workers as we work and plan to salvage and rehabilitate those who have become ill or injured, and to maintain and promote ever better medical and health care. The Auxiliary is of increasing importance in service operations, in long range planning, and particularly in our public relations.

You, in private practice, deal with individuals primarily. You hear their complaints, examine, diagnose, and minister to their medical needs. We in public health practice hear the stories of, and serve in a similar manner, the community, county, and state. It is important that private and public health practitioners coordinate their efforts, since one group has constant touch with the needs of the individual, and the other with those of the public. Each has developed teams of co-workers in order to operate more competently and economically. In past generations much of the available time has been used in meeting urgent emergency situations and in travel or subprofessional work. During the last quarter-century remarkable progress has been made in hospital construction, surgical techniques, chemical, antibiotic and hormone therapy, nutrition, rehabilitation, economical screening tests for early case-finding, and more complicated tests for diagnosis and prognosis, environmental sanitation, and immunizing agents, and in reducing the catastrophic financial shock of sickness by public underwriting of medical costs for the indigent, and by voluntary prepayment plans—complete for those of lower, and partial for upper, income families. The voluntary prepayment plan approved here this week should prove beneficial to the public and to physicians and their interrelationships.

The Need for Public Understanding and Cooperation

Perhaps we have overpublicized the progress we have made, and at times have combined this attitude with a condescending and hurried manner. If physicians are looked on as supermen, both private patients and the recipients of public health services have greater difficulty in understanding how and why there should be any medical or health problems. After seeing medical accomplishments formerly thought to be impossible, the public tends to overlook the difficulties that first had to be overcome, and criticizes anything short of absolute perfection. Shortcomings are magnified and exaggerated. Babe Ruth often got boos when he made only a double or single, and that psychology is behind some of the present day criticisms of doctors. Unfortunately, criticisms tend to snowball with repetition, and I often ask, "What has been your own experience, in your family, with your doctor?" The answer most often is, "He always does everything needed promptly and really does not charge as much as he should." A helpful trend is that even with increasingly crowded curricula, the better medical and dental schools have insisted on better training in sociology, preventive medicine, and public relations.

Read before the Conjoint Session of the State Board of Health and the Medical Society of the State of North Carolina, Pinehurst, May 7, 1952.

*Secretary of the State Board of Health and State Health Officer.

It may be enlightening to contrast the public attitude toward another professional group—lawyers. Do you hear any clamor for "socializing" or regimenting them? Yet our state supports about an equal number of lawyers and medical doctors, and at similar incomes. Lawyers undergo few of the personal sacrifices, take pride in the *status quo*, and follow precedent all the way back for hundreds of years. Except for high retainer fees they do little or nothing to correspond to our preventive medical services. What do they do that compares with the heavy charity service load of almost every private practitioner? They have been given the majority of key posts in all three branches of our government, and enjoy popularity and public acclaim. Even though the lawyers who run our government enjoy this popularity and medical doctors are temporarily under criticism, it would seem short-sighted and extremely uneconomical to place lawyers as costly middlemen between the patient and his doctor in any type of so-called socialization scheme. Interposing a costly and unwieldly bureaucracy as a substitute for the confidential and direct relationship between patient and doctor would not hasten correction of the difficulties we are already on our way toward eliminating.

Doctors are human

We should discourage the idea that physicians are supermen, and as quickly as possible have the public realize that doctors are human beings—just ordinary citizens of the community with a need for study, sleep, and recreation. Many factors influence health. The standard of living is a vital factor. The patient and the public have a considerable responsibility for health standards. Most families, after moving to a new place, wait for an emergency (often at night) to get acquainted with the doctor. Every crossroads village feels neglected unless a doctor is induced to settle there, and then everyone takes all except minor complaints and emergencies (and except in bad weather and at night) to the larger town or city doctor. Families that do not expect to pay are particularly prone to call the doctor to the home instead of going to his office, and at night when a day call could have been made. One doctor trying to serve a small community, when thus treated, will soon wear out or move away—with rare exceptions, of course. With good roads and telephones available, every community, whenever possible, should have two doctors rather than one, so that each can live as a human being in the community. I repeat that each doctor is entitled to study, to engage in recreation, and even to become sick or get some sleep. Two doctors in the community will ensure uninterrupted service without the necessity of long distance travel.

Dr. F. R. Taylor, one of our esteemed colleagues, has urged that in any difficulty it is well to start with the statement, "It is my fault." I have referred to the quirk of human psychology evidenced by the present attitude toward medical doctors and toward lawyers. Have we doctors sufficiently reminded patients and the public that doctors are human beings, and that individual and public understanding, cooperation, and helpful participation are essential in order that the medical teams, private and public, can be of greatest service? Taking the public into active partnership in meeting present needs and in long-range planning will prevent those outside the profession from completely taking over and eventually telling the doctor what to do, and how and when and where.

Physicians have limits of physical endurance. They do their best work only if their patients are well informed and carry out their obligations by maintaining environmental sanitation, coming in for immunizations, and consulting the physician early rather than after an illness or injury has been complicated by delay. Medical and health services are not just handed out on a silver tray by doctors or selfishly withheld by them; in many cases, the individual, the family, the community have hindered or destroyed the effectiveness of the doctor's efforts. Let's admit and correct the unfortunate fact that individual, family, and community responsibility has not kept pace with recent improvements in the training of doctors and in the tools with which they work. This is one of the many joint responsibilities of physicians in public health with those in private practice.

Diamond Jubilee Anniversary

This year we celebrate the Diamond Jubilee Anniversary of the founding of the State Board of Health. It is a time for inventory-taking, for analysis and appraisal, for discreet long-range planning. Our most urgent needs are public understanding, the re-estab-

lishing of local responsibility, and the honest determination of each citizen to do his utmost toward improving medical and health care. In addition to the individual problems referred to, the public fails to provide adequately for training schools for medical and assisting personnel, for neuropsychiatric and tuberculosis hospitals, and for health departments. There is, moreover, much unfair criticism of the doctors in charge of these agencies. Construction and maintenance of schools, hospitals, nurses' homes and health centers, and better distribution of doctors (and assisting personnel) is proving helpful. Maintenance, particularly of our new general hospitals, will require careful immediate and long-range planning, for with the impact of this enormous new financial burden could come overwhelming demands for undue federal support and control.

Participation of Physicians in the Public Health Program

The entire program of the State Board of Health and of the local health departments has been developed under the leadership of the State Medical Society and through medical representatives on the respective boards. The health services have been of enormous public relations value to the physicians of this state, and could be greater if every physician would identify himself with them. A few backward doctors, by ignorance and destructive criticism, prevent fuller capitalization on the good will created by health departments. State funds for health services are appropriated to 20 odd agencies other than the State Board of Health (and local health departments), but on no other board are doctors equally well represented.

No other agency, private or public, can render public health services as competently and economically as your health departments. Many of these services would not or could not be performed elsewhere, and they help the private medical practitioner and the public. Examples are: laboratory services; vital statistics records; immunizations; supervision of midwives; prenatal and well-baby centers; nutrition; school health; protection of water, milk, and food; safe disposal of human wastes; oral hygiene; crippled children's clinics; occupational hygiene; home accident prevention; early case-finding in tuberculosis, venereal diseases, cancer, diabetes, and mental disorders; insect and rodent control; and health education. It is by working and planning together and by public participation that private and public medical practitioners can enlist appreciation and support for these and all other medical and health services.

Public relations

The Public Relations Committee of the State Medical Society has been helpful. Several weekly newspaper columns, the *Health Bulletin*, and radio broadcasts (including that of the State Board of Health over three major stations) have also been useful in helping to bring public understanding and cooperation nearer to the high level attained and held for technical, medical, and health services.

Certain very active committees are needed in each local medical society, particularly on public relations, public health, and grievances. The public relations committees at this time have an opportunity and a responsibility, heretofore largely overlooked, to inform members of the General Assembly who will meet in January, and these committees should also keep our congressmen informed at all times on legislative matters affecting individual and public health.

Consultation

May I urge each local medical society to arrange one annual meeting at which the local health officer will be required to report on policies and programs? He should be present at the monthly meetings to report on and answer questions regarding current health needs. This is being done in a few counties. Since we have local autonomy and since most of the health work is done in or through local health departments, all private practitioners will thus keep better informed. An active public health committee in each local medical society is needed for consultation with the local board of health and health department, and will assure that our health services are kept in useful fields. Some medical societies are promoting excellent public relations by forming local health councils and making an active partnership with public representatives in this advisory group.

Handling of grievances

More publicity regarding the handling of grievances is desirable. Every effort should be made to improve our reputation (sometimes deserved) for protecting misfeasance and malfeasance whenever perpetrated by a

medical doctor. We protected the public by closing inferior medical schools. More active prosecutions and correction of grievances are needed now on the basis of public protection, and we should continue our good record in this state of avoiding those on the basis of technical medical politics. It will help and not hurt our public relations when we frankly admit that a physician may be able to pass rigid medical examinations without accepting our even more rigid ethical standards. The medical profession should itself be the first to recognize, and assist in correcting its offenders. Being good individually is not enough; failure to eliminate the rare instances of selfishness, greed, dishonesty, or incompetence in our ranks has caused loss of prestige, and could do much toward eventually causing loss of individual freedom in medical and health practice.

Significant Legislation

In my report a year ago, reference was made to efforts by those with limited training who are continually attempting to remove legal distinctions (so called discriminations) between themselves and those more fully qualified. It is urgent that all physicians take a more active interest in legislation, not only by continuing to oppose that which is harmful, but by constructively planning and aiding that which would promote health. Attention is invited to two examples of the latter. A medical examiner bill (erroneously called the coroner bill) was introduced late during the last session of the General Assembly. It would eliminate many of the objections to our present obsolete system, without in any way interfering with the prestige and prerogatives of our coroners. If introduced early in the next session and backed by informed medical practitioners, such constructive legislation should have a better chance of being passed.

Maintaining local autonomy

In North Carolina, the principal local unit of government is the county. Our local health departments enjoy more local autonomy than do those in any other state. Under our system, a public health nurse is assigned to an area of population, performing all services within the area, in contrast to the overlapping, uneconomical plan which provides a specialist nurse for each activity, with one getting in the other's way all over the county. Some of the states, even a few of large area, are still attempting to operate local health services (so-called), from the state capital. I urge you to look into this situation and to request your congressmen and senators to vote for generalized instead of specialized appropriations for public health. We have to keep nine separate sets of books on federal appropriations, when one for general health would be better. Specialized appropriations result in a larger central overhead expense, with overstaffing by specialists, in the national and state capitals, and less money for the local health departments where practically all the health services are performed. Your study, understanding, and action are solicited, and if you can get the understanding of our legislators it will do much to curb the tendency toward centralization and strengthen the local health units, where your influence and guidance toward more useful service will be felt. Please talk with your local health officer about these specialized versus generalized federal appropriations. There will be an article on the subject in an early issue of the *Health Bulletin.*

Conclusion

As we look ahead to future medicine in North Carolina, I would like to close with excerpts from a recent Commonwealth Fund Report (1949):

"Sometimes the people who are trying to change medicine have a word for the quality they want to add to it . . . **Scientific** medicine . . . was to tease out the physical components of disease and set them in order. It has given us superb microscopy, masterful biochemistry, precision in diagnosis, and—in some areas—brilliant therapy. It has led to the flowering of specialization . . . Specialization has gained at the expense of something equally valuable—a sound general view of the patient. The parts have run away with the whole . . . There are too many people who are allowed to develop ailments that medicine, either alone or in partnership . . . could prevent. All this has become a commonplace criticism of medicine, and many medical educators and other leaders are trying to change the situation.

"There is no one good word to describe what medicine ought now to become. Those who believe doctors should be wiser than they are now deny the exclusive claim of the older medicine to the name **scientific**: they believe medicine should become more scientific, in the sense of admitting data now commonly left out of consideration. Medical progressives use the word **preventive** when they think of what medicine could do before pathology develops; **constructive** when they set 'positive health' as their goal; **comprehensive** when they ask doctors to deal with people whole instead of in parts; **social** when they feel the pressure of the human environment on the individual and want the doctor to be at least aware of it. All these concepts are facets of good medicine; taken together they mean something different from the kind of medicine that now prevails.

Specifically, without leaving out anything that is now essential to good medicine, they add new dimensions to it: breadth, to include more attention to the patient's environment; depth, to include some comprehension of his inner motivations; and duration, to relate the patient's present condition to his past and future."

THE USE OF ELECTROSHOCK THERAPY IN A PSYCHOSIS ASSOCIATED WITH PERNICIOUS ANEMIA

WILMER C. BETTS, M.D.

DURHAM

The fact that only one report has been made of the use of electroshock therapy in a psychosis associated with pernicious anemia, and that the cerebral metabolism was followed in such a patient at Duke Hospital, justifies the report of this case[1].

Experience with Electroshock in Other Organic Psychoses

In the so-called organic psychoses, the psychotic picture is the reaction of the total organism to the noxious agent, metabolic deficit, and so forth, and thus may be termed a symptomatic psychosis. The actual psychosis that results is determined to a large extent by the pre-existing character structure of the individual.

Electroshock therapy has been utilized in treating the psychiatric reaction accompanying organic diseases of the central nervous system other than pernicious anemia. Solomon and associates[2] have found that electroshock therapy is useful in terminating the psychotic reactions accompanying general paresis, providing the psychotic picture is predominately an affective one. Kalinowsky and Hoch[3] point out that electroshock therapy may be used in treating the frequent depressive reactions encountered in Parkinson's disease, arteriosclerotic brain disease, and senile brain disease.

No reports of cerebral metabolic studies in patients with psychoses accompanying pernicious anemia have been published. In studying patients at Duke Hospital, Scheinberg found a lowered cerebral blood flow and oxygen consumption in patients with pernicious anemia even without anemia[4]. Only one report of cerebral metabolism in a patient with an affective psychosis is available. The cerebral blood flow was low prior to prefrontal lobotomy in a patient with a manic-depressive psychosis studied by Shenkin and others[5].

The effect of electroshock therapy on cerebral metabolism has been reported. In some 7 schizophrenic patients studied from 10 to 20 minutes after a generalized convulsion induced by electroshock, there was a moderate fall in cerebral oxygen consumption and a marked decrease in cerebral blood flow[6]. These changes in cerebral metabolism might be accounted for by the postictal cortical changes observed by Scholz[7]. He observed initial congestion and subsequent anemia of the cortex following convulsive seizures.

Report of a Case

(Table 1 shows the figures obtained from the cerebral metabolic studies before intensive liver therapy; after 27 days of daily intramuscular liver injections of 15 units each; 48 hours after seven electroshock treatments and liver therapy; and after six months of continued liver therapy. Chart 1 demonstrates graphically the changes in the patient's clinical condition, using the Malamud psychiatric rating scale, and the changes in cerebral metabolism[8]. As will be noted from Chart 1, the patient's cerebral blood flow, oxygen consumption, and glucose metabolism decreased considerably following electroshock therapy, despite the fact that the patient was remarkably improved from the clinical point of view.)

A 41 year old housewife was brought to Duke Hospital on October 25, 1949, by her husband, who stated: "Her mind is off."

Present illness: Her sex interest had been decreased for 11 months. Six months before admission she began to complain of fatigability, numbness and tingling in her feet, and difficulty in locating her legs. She was noted to be pale, had enuresis on two occasions, and was very suspicious of her husband. She was depressed for a period of three weeks some six months before admission. At that time she was given capsules containing iron and liver, and improved to some extent.

During the six months before her admission she had been somewhat depressed, especially during the last four weeks. She was constipated, had a poor appetite and had lost some weight, and her gait was very unsteady.

From the Department of Neuropsychiatry, Duke University School of Medicine, Durham, North Carolina.

Other symptoms included a diurnal mood variation, slowed talk, and loss of interest in her housework and personal appearance. For two months before admission she had been more forgetful than usual and began spending most of her time in bed. Some two weeks before admission she had received seven injections of intramuscular liver by her family doctor, although no examination of her blood had been made. She did not improve on this regimen; and three days before admission, she began to complain that some one was going to annihilate her family and herself. She also complained that people were talking about her and saying that she was going to give everyone the ringworm infection from her fingers. On the way to the hospital, she attempted to get out of the moving automobile.

Family history: No history of familial diseases including pernicious anemia and affective psychoses was obtained.

Past history

The patient had been depressed for a short while some 16 years previously. This depression followed the birth by cesarean section of her only child. She was again depressed for a period of three months some four years previously.

Her husband described her as follows: "A good, smart girl with quite a bit of pride, easy to get along with, always nervous and easy to get tired, and always willing to do anything I want to do." He stated that she rarely expressed her opinion openly.

Physical examination

The patient was a thin, wiry, graying woman who presented a strikingly disheveled picture and showed no interest in her personal appearance. She moved quite slowly, with a wide and unsteady gait. Her facial expression was constantly one of fear and depression. She never smiled and would cry frequently during the interviews.

Physical findings included pyorrhea alveolaris, onychomycosis, a Romberg sign, absent tendon reflexes at both knees and both ankles (tendon reflexes in the arms were 2 plus bilaterally), diminished to absent vibratory sense bilaterally from the crest of the ileum down both legs, complete loss of position sense in all toes, loss of sensation for pinprick over her toes with decreased pain sensation bilaterally to a point about one inch above both patellae and over her hands. She performed the heel-to-shin test well. Her tongue was pink with normal papillae, she showed no retinal hemorrhages, she had no ankle edema, and her ears were of normal configuration.

Table 1
Cerebral Metabolic Studies Showing Result of Therapy in a Psychosis Associated with Pernicious Anemia

	Oct. 26, 1949	*Nov. 28, 1949 (After 27 days of daily liver injections)*	*Dec. 9, 1949 (After 7 electroshock treatments)*	*May 5, 1950*
Cerebral blood flow expressed as ml. per min. per 100 Gm. of brain tissue (normal is 65 ± 12).	49	47	32	46
Cerebral oxygen consumption expressed as ml. of oxygen per min. per 100 Gm. of brain tissue (normal is 3.8).	2.94	2.92	1.62	2.4
Cerebral glucose metabolism expressed as mg. of glucose per min. per 100 Gm. of brain tissue (normal is 6.2).	6.46	4.6	1.98	3.63

Mental status

The patient would not eat at all during the first two weeks of her hospital stay, and had to be tube-fed regularly. She voided on the floor several times. Her sleep pattern was broken, and several nights she failed to sleep at all. She consistently paused about 60 seconds before answering questions. She said that she was extremely depressed, that life was not worth living, and that she had thought of suicide on a number of occasions. Abnormalities of mental content included the delusion that she had done something wrong, that people were talking about her in the wall, and that someone was going to kill or shoot her. She thought she heard people outside the door killing her son. She was always oriented as to time, place, and person. It was impossible to complete the Wechsler-Bellvue I and Rorschach tests except for the verbal part of the Wechsler-Bellvue. Her verbal I. Q. was 107.

Laboratory data

A Wassermann test was negative. The blood count and urinary values were within normal limits. Blood chemistry studies revealed a bromide content of 51 mg. per 100 cc.; the nonprotein nitrogen was 34 mg. per

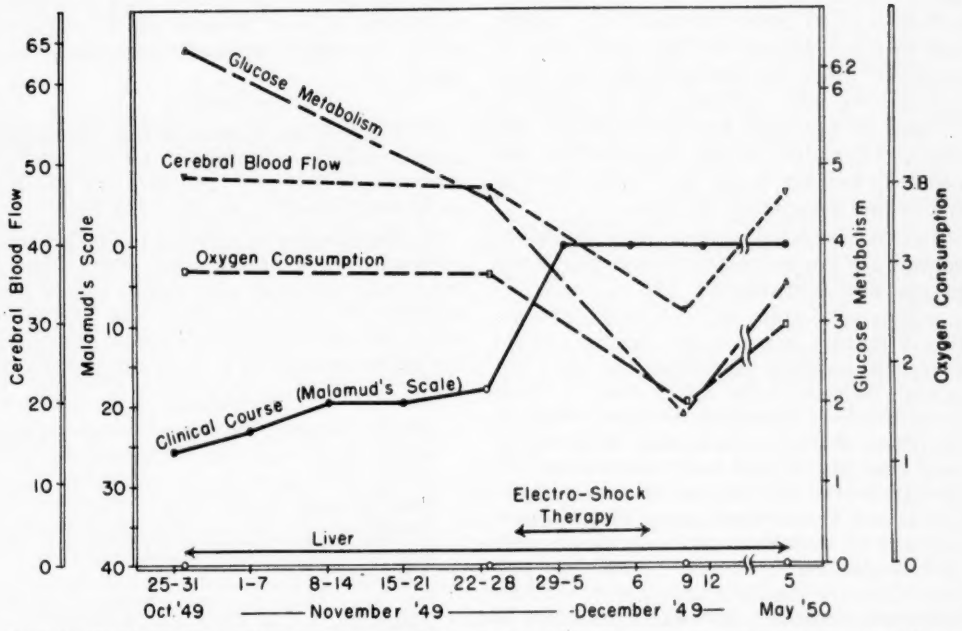

Chart 1. Changes in the patient's clinical condition (using Malamud's scale) and cerebral metabolism.

100 cc., and an indirect Van den Bergh reaction gave a bilirubin content of 0.5 mg. per 100 cc. The dynamics, protein content, cell count, and Wassermann test of the cerebrospinal fluid were all within normal limits. A gastric analysis revealed no free acid after the subcutaneous injection of 0.8 mg. of histamine phosphate. The position of the Levin tube was seen to be in the stomach by fluoroscopy. Barium studies of the stomach and small intestine revealed only some atrophy of the mucosal folds of the stomach. The electroencephalogram was within normal limits. Films of the teeth showed no root abscesses.

Course in the hospital

Cerebral metabolic studies were done by Dr. Scheinberg on the second hospital day. The findings are recorded in table 1. On the third hospital day the patient was started on daily intramuscular injections of 15 units of Lederle's Concentrated Liver Extract and was continued on this dosage throughout her 48 days in the hospital. She was continued on liver alone until the thirty-first hospital day. While on liver she still continued to void on the floor occasionally, to eat poorly, to require tube feeding occasionally, to sleep poorly, to have the above delusions and hallucinations, and to appear quite depressed. She improved to the extent of dressing occasionally, leaving her room occasionally, and feeding herself.

The cerebral metabolic studies were repeated after 28 days of liver therapy, or on the thirty-first hospital day. At that time the findings were as recorded in table 1.

In view of the large depressive element in her psychosis, the patient was started on electroshock therapy on the thirty-first hospital day. She received one treatment daily on two consecutive days and then every other day until she had a total of seven treatments. On this treatment her spirits improved remarkably, she began eating and sleeping well, and the delusional and hallucinatory material disappeared completely. Cerebral metabolic studies were done again approximately 48 hours after the last electroshock treatment. The results are recorded in table 1.

Course since discharge

Since her discharge on December 11, 1949, the patient has been followed at monthly intervals. She has been continued on weekly intramuscular injections of 30 units of Led-

erle's Concentrated Liver Extract. Recently a dosage of 60 units of vitamin B_{12} weekly has been substituted for the liver, with no ill effect. Since her discharge she has led a normal life, with few complaints except of fatigue of her legs around noontime and some continuation of her paresthesias. She has been keeping house and taking part in family and community activities.

Her hematologic studies have remained normal, and her neurologic picture has shown progressive improvement. She can now define sharp and dull over both lower extremities. Vibratory sense is now faintly present over both patellae and tibiae, but the right lateral malleolus is the only malleolus which is sensitive to vibration. Position sense in the toes is still poor. On testing for the Romberg sign the patient sways somewhat, but sustains her balance for one minute with her eyes closed. One of the most striking changes has been in the return of the left knee jerk. This tendon reflex is now 2 plus. The tendon reflexes of the right knee and both ankles have not returned. She walks well but is slightly unsteady on turns.

Cerebral metabolic studies were performed for the fourth time on May 2, 1950. These results are included in table 1.

Comment

It is, of course, impossible to say unequivocally that this patient's psychosis was due to pernicious anemia. The psychotic picture was compatible with published descriptions of symptomatic psychoses accompanying pernicious anemia.

As noted above, electroshock can be a useful therapeutic agent in treating some symptomatic psychoses, especially those with a prominent depressive element. This one case certainly suggests that the judicious use of electroshock therapy in psychoses accompanying pernicious anemia can produce clinical improvement despite a presumably adverse effect on the cerebral metabolism. This point is interesting in view of the fact that both electroshock therapy and bilateral prefrontal lobotomy frequently produce clinical improvement despite their lowering of cerebral oxygen consumption and cerebral blood flow, and that insulin shock therapy markedly reduces cerebral oxygen consumption. The continuation of the low figures in the cerebral metabolic studies in this patient certainly suggest that her cerebral tissue has been damaged to the extent that a number of months of liver therapy will be required before extensive reparative processes take place.

Conclusions

1. A psychosis accompanying pernicious anemia may be terminated by the use of electroshock therapy, providing the psychosis is predominantly an affective one.

2. The decrease in cerebral blood flow and cerebral oxygen consumption which follows electrically produced convulsions can be disregarded in the treatment of psychoses accompanying pernicious anemia, providing the patient's welfare is of primary concern.

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Psychiatry and medical practice. Much of the understanding that I have attributed to psychiatry no doubt came to me not from it but from my practice in northern Vermont and from the example and tutelage of my father, a Vermont country doctor. At least it is from this combined background of practice and psychiatry that these words come. When I see the young man who has gone into psychiatry directly from his hospital internship, I often think that he has missed an essential experience from which general practitioners have achieved an understanding that surpasses his. There are, no doubt, more good psychiatrists among practitioners than they imagine. The continued application of their broad human understanding, their responsiveness to the real problems of patients—that is the practice of psychiatry.—Hyde, R. W.: The Contributions of Psychiatry to Medical Practice, New England J. Med. 246:611 (April 17) 1952.

Research is still and ever must be, an individual capacity and a personal absorbing enthusiasm. Work of the highest calibre, such as is important to produce, cannot be achieved by the "young man in a hurry" working merely for an easy living from nine to five and pressed by his superiors to produce two or three papers a year. The need is to select, train and encourage those most suited to the purpose.—Murray, E. G. D.: The Emergency for Research in Unexplored Fields of Public Health, Canad. M.A.J. 66:276 (March) 1952.

MANAGEMENT OF CARDIAC EDEMA

ELIAS S. FAISON, M.D.
CHARLOTTE

Edema is the term applied to an excessive accumulation of fluid in the tissue spaces. If there is a perfect balance between the inward and outward flow of fluid through the capillary membrane, edema does not occur; but if absorption is exceeded by transudation, edema is inevitable.

There are many types of edema, each representing a symptom of some primary condition. In order to manage any one of these disorders it is necessary to be familiar with the type at hand. This fact becomes strikingly evident when we pursue a therapeutic regimen directed at cardiac edema when in reality we are dealing with a case of cirrhosis of the liver. Even when the diagnosis is certain and we know that the edema under consideration is cardiac in origin, it is still necessary to know the type of cardiac lesion that is producing the condition.

Although it is not within the scope of this discussion to delve into the physiology of the production of cardiac edema, it does behoove us, in the light of present day management, to know as much as possible about the condition that is responsible for the edema.

The Physiology of Edema

Starling first pointed out that a rise in venous pressure or a fall in plasma protein would cause fluid to leave the blood stream and enter the tissue pores. For a number of decades this explanation seemed to cover all cases of dropsy.

Lewis and McKenzie were among the first to believe that when the heart muscle failed, the body, in turn, would not receive a sufficient supply of blood, and that dyspnea and fatigue were due to an insufficient supply of oxygen. In 1941 Borst, in reporting the electrolyte retention which follows gastric hemorrhage, pointed out that in all forms of dropsy, circulatory disturbances similar to those in hemorrhage, shock, or dehydration occurred. He concluded that water and salt retention were secondary to inadequate cardiac output, and that excretion of urine with a low sodium content was one of the essential proofs of failure to maintain the proper output.

Stead and his co-workers knew nothing of this observation when they learned that cardiac edema was due to a decreased volume of glomerular filtrate, and was reflexively brought about by an inadequate supply of blood to the tissues. Homer Smith had previously proved the effect of such a reflex mechanism on renal blood flow. This mechanism operates also in hyproteinemia, and with increased desoxycorticosterone, as is shown by the reduction in the electrolyte content of the sweat and the urine. This electrolyte content returns to normal, as does the glomerular filtrate, when the blood volume is restored by injecting human albumin.

Management of Acute Failure

An excellent example of acute failure is acute pulmonary edema. It is unnecessary to explain that with the advent of more modern methods of treatment one of the old-fashioned but good remedies has been lost by the wayside — namely venesection. This procedure should not be forgotten. It is a sure, quick way of lowering venous pressure and reducing hydremia. Many patients have been saved by the prompt withdrawal of 500 to 700 cc. of blood.

One of the opiates should be given to relieve fear and apprehension when the patient is first seen. We prefer Pantopon to any of the others since it seems to cause less nausea. It may be given either intravenously or intramuscularly. The severity of the case will determine the route of administration. Oxygen, of course should always be used, if available. The tent is to be preferred to other methods of administration. Rapid digitalization should be used. After the edema has subsided, there is sufficient time to determine the cause of the acute episode and then proper precautions will be taken to prevent another such harrowing experience.

Management of Chronic Failure

Acute cardiac edema is less often encountered and its management is less difficult than is the prevention of dependent edema, or chronic failure. This requires constant vigilance on the part of the physician and his patience is frequently taxed to the point of exhaustion. A great deal of encouragement must be used, and, even with the best remedies, there will be failures. The patient will discover for himself that gravity is a great aid in relieving pressure in the right auricle in left ventricular failure and

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that the upright position should be assumed.

Digitalis is of benefit whether there is a normal rhythm or auricular fibrillation is present, and also whether the rate is fast or slow. It lowers the venous pressure, raises the blood pressure, slows the heart rate, increases the vital capacity, increases the cardiac output, encourages diuresis, relieves hepatic distention, and shortens the pulmonary circulation time. Again it is necessary to emphasize the importance of correct diagnosis, since digitalis is ineffective in edema due to some other cause—for instance, in thyrotoxicosis, pernicious anemia, acute nephritis, induced hydremia, and the like.

The method of administering the drug varies with the individual patient. It may be given slowly by using the leaf—for instance, 1½ grains three times a day p.c. for five days, and then once daily—or rapidly by using one of the glycosides. In congestive failure, heart block does not preclude the use of digitalis.

Quinidine: In chronic failure due to auricular fibrillation, *quinidine sulphate* should be used—that is, provided that there is no conduction delay, no subacute bacterial endocarditis, and no history of pre-existing angina pectoris cured by the irregular rhythm. Although a good many of our colleagues fear the use of quinidine, we feel that they should rather fear not using it when it is needed[1]. The dosage may vary, but a good plan is to give 0.2 Gm. (3 grains) every three hours for a day, and then increase the dose to 0.4 Gm. (6 grains), and on to 0.6 Gm. (9 grains) every three hours. Seldom is it necessary to exceed this dosage. The heart rate should have been reduced to 80 or 90 by the use of digitalis prior to beginning the quinidine. If after the administration of a high dosage the rhythm remains irregular, the quinidine should be discontinued.

Too much emphasis cannot be placed upon the liberal use of the *mercurials*. They are of especial benefit in the management of chronic edematous patients, and should be used in conjunction with the other drugs at our disposal. They act by preventing tubular reabsorption of sodium and water. They should be given intramuscularly daily, never intravenously, until the edema has been eradicated. They may then be given every other day, twice a week, or less often. Some patients are kept quite comfortable by weekly injections, and this routine may be kept up for years.

Quite recently the *resins* have been added to our armamentarium. They act by absorbing the sodium from the intestinal tract and releasing ammonia, which, in turn, forms ammonium chloride. This within itself is a mild diuretic. A low sodium diet, however, should be followed along with the resins.

In the past few years we have become more aware of the importance of *sodium restriction* than in all the years heretofore. No matter how potent edema-producing factors are present, it is a truism that little or no salt can be formed or accumulate if it is restricted from the diet. Low sodium diets are readily available today, and the public is becoming familiar with the fact that a low sodium intake is a necessary part of the successful management of cardiac edema.

At this point a word concerning the "salt depletion syndrome" should be mentioned. The symptoms are similar to those in Addison's disease — namely, weakness, pain in the extremities, sweating, and so forth. Treatment, of course, is replacement of salt.

Finally, our attention should always be focused upon *obesity*. Each pound over the calculated normal weight adds an unnecessary burden upon an overworked and usually diseased heart. This should be explained to every patient. In our experience, the achievement of cooperation on this score is the most difficult task of all. Patients will readily take disagreeable medicaments, but will not refrain from eating to the point of complete satiation. Obesity, in my opinion, is one of the gravest concerns, from the standpoint of longevity, of our nation today; and yet nothing is done about it. During the last war, when food was scarce, there was no radio or press campaigns to encourage obese people to eat a normal diet and thus release millions of pounds of food for areas in which there was an acute shortage. Here was a chance to spare the lives of thousands of our people for weeks, months and years, and we failed to do it.

Summary

The successful management of edema is dependent upon an understanding of the

particular type at hand and of the underlying condition.

A brief presentation of the present day concept of the physiology of cardiac edema is followed by a discussion of the management of both acute and chronic heart failure, with emphasis on the avoidance or correction of obesity.

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PAROXYSMAL AURICULAR FLUTTER WITH 1:1 VENTRICULAR RESPONSE

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Paroxysmal rapid heart action is a common occurrence in medical practice. The prognosis is usually good unless the condition lasts a long time or is associated with serious organic heart disease. Even in the normal heart, when the ventricular rate remains fast for over a few hours, heart failure is likely to result. The most extreme rates are associated with such poor cardiac outflow that the patient is in a state of shock. This is particularly true in auricular flutter without auriculoventricular block, as the auricles and ventricles each contract at rates in excess of 250 a minute.

Auricular flutter is an infrequent electrocardiographic finding, but it is still more unusual to observe this rhythm without concomitant partial block of the electrical impulse. Auricular muscle has the power to contract at a higher rate than the auriculoventricular node can respond; hence the usual occurrence in flutter is 2:1, 3:1, or higher degrees of heart block.

In 1942 Cossio and Berconsky[1] reported one case of auricular flutter with 1:1 conduction crisis. Their review of the literature disclosed that theirs was the twentieth recorded case. Undoubtedly this rhythm occurs more frequently, as all cases are not reported, and many times it is not detected, being confused with other types of supraventricular tachycardia. Flutter must be considered when the ventricular rate is greater than the usually accepted maximum of 220 for paroxysmal auricular tachycardia, but only if the degree of block changes to 2:1 or higher will the characteristic pattern of flutter appear in the electrocardiogram. Miller[2] also attests to the rarity of this disorder. Of 218 cardiac patients admitted to one service of the Edinburgh Royal Infirmary, 4 had auricular flutter, and 2 had 1:1 ventricular response. Evans[3], in 1944, reviewed the electrocardiograms of patients classified as having paroxysmal auricular tachycardia, and found that in many of them lead CR_1 disclosed P waves characteristic of 2:1 flutter. He suggested that these two arrhythmias were really one and the same, the clinical variation being accounted for by difference in rate and degree of block.

The unity of all ectopic auricular rhythms recently has been pointed out by Prinzmetal and his associates[4]. They contend that the difference between auricular paroxysmal tachycardia, auricular flutter, and auricular fibrillation is purely quantitative. When the impulse arises from an ectopic focus in the auricle, displacing the normal sinus node impulse, auricular tachycardia is produced at rates of 150 to 200, auricular flutter at rates of 240 to 350, and auricular fibrillation at higher rates. These figures are subject to exception, as typical flutter has been recorded at 190; and there are various types of so-called impure flutter, in which flutter and fibrillation seem to be blended together. In contrast to earlier studies of the physiologic nature of these arrhythmias, the observations of Prinzmetal and his group were made directly, using ultra-high speed motion pictures. By this method, they were able to see and record auricular contractions, which, together with direct electrocardiographic leads, enabled them to disprove the circus movement theory advocated by Lewis and afterwards universally accepted.

Report of Case

A white woman, aged 65, was first seen on October 11, 1947, complaining of nervous "spells" which she could not describe clearly. She was well nourished and not acutely ill. Blood pressure was 120 systolic, 80 diastolic; the heart was of normal size, with regular rhythm, rate 76, and no murmurs were present. She was seen again a year later, and during the interval she had had three attacks of "nervousness." Upon questioning, these appeared to be episodes of paroxysmal tachycardia. Her complaints during an attack were chiefly weakness and giddiness. Similar attacks took place in December, 1949, and February, 1950.

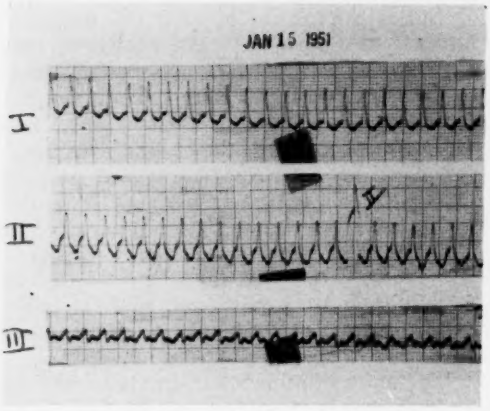

Fig. 1. First electrocardiogram, which records only supraventricular tachycardia, rate 273. The very rapid rate should lead one to suspect 1:1 flutter.

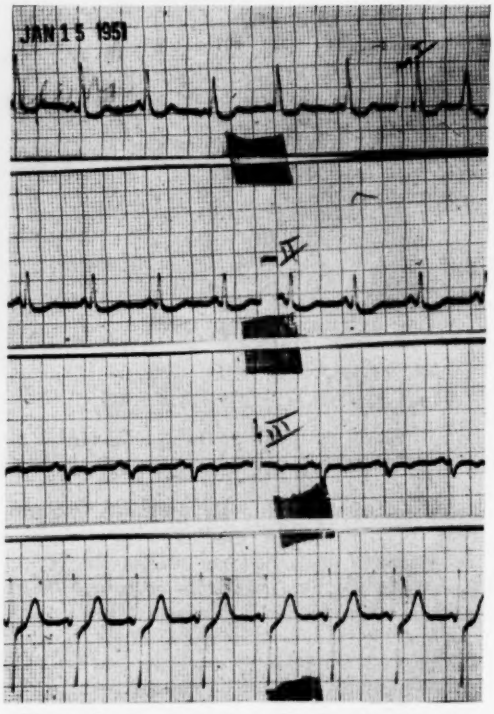

Fig. 2. Tracing made immediately after the cessation of tachycardia. The ST depression may be due to myocardial fatigue.

On January 15, 1951, she was seen in the midst of an attack. She was fully conscious, and complained only of weakness and breathlessness. Pulse and blood pressure could not be measured; the skin was cold, damp, and ashen gray. Heart rate at the apex was 273 a minute. An electrocardiograph was at hand and a record was made for the first time (fig. 1). Within a few minutes, before any treatment could be given, the rhythm spontaneously reverted to normal (fig. 2). Quinidine was advised for prophylactic effect, but she took it irregularly. In March, 1951, she had a paroxysm lasting six hours, and in June one lasting three hours. In October she declared that she had been free of attacks for four months, and had no symptoms. She was taking 0.2 Gm. of quinidine sulfate three times a day.

On October 30, 1951, at 10 A.M. she was brought to the hospital emergency room with another episode of tachycardia, similar to the previous attacks. She was given 10 mg. of morphine at once and 0.4 Gm. of quinidine every two hours. Six hours later the tachycardia was still present, the rate being 280. At this time 0.5 mg. of ouabain was injected intravenously; two hours later 0.5 mg. Digoxin was given orally. At 6 P.M. the pulse was irregular, with coupling and short runs of tachycardia, so another electrocardiogram was made (fig. 3). This long tracing, with the exception of the first section, was derived from lead II. The first section (lead I) showed bigeminal rhythm (fig. 3A) which was apparently superimposed on auricular flutter (fig. 3B); then pure 2:1 flutter was recorded (fig. 3C) which was in turn superseded by the very rapid 1:1 flutter (fig. 3D). The last section demonstrated changing 1:1 and 2:1 ventricular response.

During this time the patient was pale, sweating, and complained of moderate substernal distress and dyspnea. Digoxin was stopped and 0.4 Gm. of quinidine was ordered again at two hour intervals. The next morning regular sinus rhythm was present and her symptoms had disappeared. A tracing made at 3 P.M. October 31, 1951, (fig. 4) was within normal limits except for prolongation of the Q-T interval, apparently an effect of quinidine. The patient left the hospital the following day feeling quite well. She was advised to take 3 or 4 tablets of quinidine (0.2 Gm. each) daily, and has had no attacks for at least three months after her discharge from the hospital.

Summary

1. A case of paroxysmal auricular flutter with 1:1 auriculoventricular conduction is

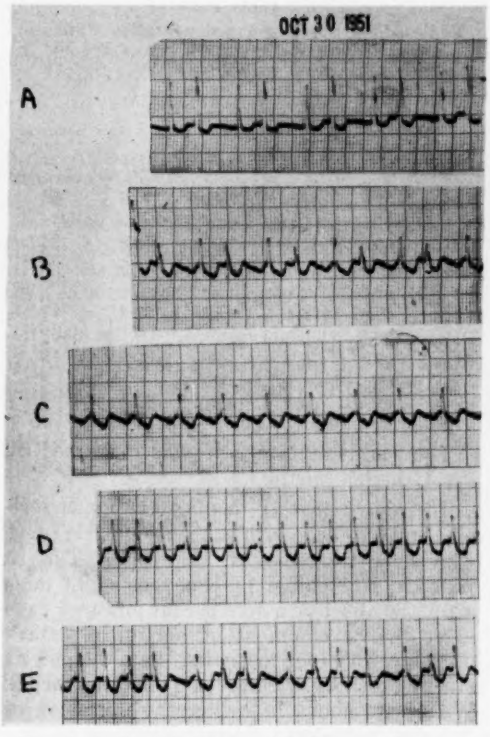

Fig. 3. A. Lead I. The ventricular complexes occur in pairs—bigeminal rhythm. Flutter waves are absent in this lead. B. Lead II. Same coupling as in A, but flutter waves are clearly defined. One R wave occurs at the summit of a P wave and the next R wave appears on the descending limb of the P wave. C. Characteristic 2:1 flutter. D. 1:1 flutter. E. Changing 1:1 and 2:1 response.

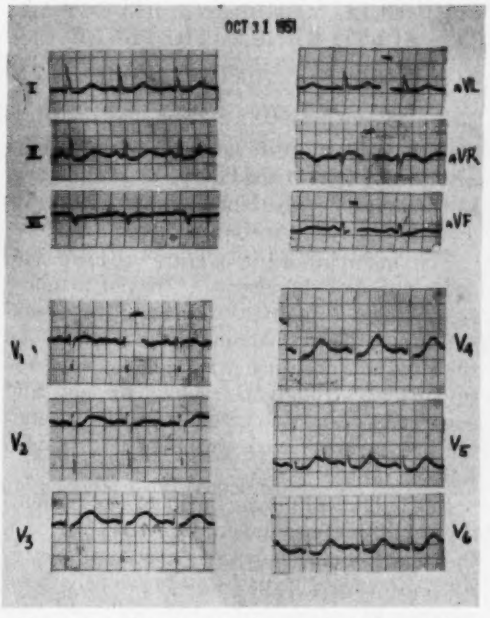

Fig. 4. Regular sinus rhythm, made 22 hours after figure 3. The prolonged Q-T interval is believed to be an effect of quinidine.

presented, occurring in a woman between the ages of 65 to 69 years, with an otherwise normal heart.

2. The differentiation between 1:1 flutter and ordinary paroxysmal auricular tachycardia can be made when a higher degree of block occurs, which was accomplished in this case by digitalis-like drugs.

3. The occurrence of this type of flutter appears to add clinical verification to the theory of unity of all ectopic auricular rhythms.

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Dire effects from prolonged physical exertion are also still feared by the public, though not by the profession, which no longer accepts as valid such terms as "athlete's heart" or "strained heart." Likewise, one particular act of exertion may be blamed for a heart attack, even though it was performed hours or even days before. Mackenzie's dictum may be repeated: the heart does not remember. Physicians should know best the causes of illness, because they have studied pathology and the lay public has not. You know of the pathologist in the postmortem room who said that he was not surprised at what people died of, but he was surprised at what they could live with.—Sir John Parkinson: The Patient and the Physician, Ann. Int. Med. 35:307-308 (Aug.) 1951.

Peculiarities of patients: Formerly it was the doctors who ascribed ill-health to ill-doing or to externals; now it is the public. A physician is intent on the diagnosis, while a patient bothers about the cause and thinks it logical to do so. A particularly enjoyable meal is readily accepted as the cause of a heart attack, or it is overwork that brought it about. Though inseparable from human life, anxiety or worry is held to account by the public for heart affections of every kind; and even inside the profession there is a tendency to force this fancy. Nursing a sick relative does not injure the heart, though the nerves may not be equal to it. When war bombing stopped in Britain I did not notice the fall in the incidence of heart attacks which this misconception about causes might have led me to expect.—Sir John Parkinson: The Patient and the Physician, Ann. Int. Med. 35:307 (Aug.) 1951.

THE CELL MEMBRANE DEFECT IN ACUTE RHEUMATIC FEVER

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Acute rheumatic fever is classically characterized, early in the course of the disease, by migratory polyarthritis and other evidences of serous membrane involvement.

The histopathologic picture during the acute phase of the disease is that of primary injury to the connective tissue and its ground substance. The rheumatic lesion starts in the ground substance with edema, develops into waxy, strongly refractory masses, and eventually goes on to actual necrosis[1]. Cellular proliferation with granuloma formation follows.

In the clinical management of the patient, the erythrocyte sedimentation rate has been the most reliable index of "rheumatic activity." However, it has not previously been possible to correlate this test with any specific physiologic defect.

The recent introduction of radiosodium as a tool in clinical investigation has provided a method for the study of generalized changes in the permeability of intact biologic membranes.

The following preliminary studies in 2 patients with acute rheumatic fever seem to indicate the presence of a cell membrane defect which correlates well with the known pathologic features of acute rheumatic fever. This physiologic defect appears to be reversible, and is suppressed by salicylates.

The radiosodium (Na^{24}) space was measured by the isotope dilution technique[2]. A three hour serum specimen was counted in order to determine the radiosodium concentration in a representative sample of the extracellular fluid after its partial equilibration with the native ion. In the normal individual, the radiosodium space, as determined by this method, is thought to represent a functional physiologic unit, although by no means the anatomic extracellular fluid space.

Table 1

Radiosodium Space and Sedimentation Rate in Acute Rheumatic Fever in a Boy, Aged 15, Treated with Salicylates

Date	*Maximum Temp. (F.)*	*Weight (Kg.)*	*Radiosodium Space (ml.)*	*(% Body Wt.)*	*Sedimentation Rate (mm./hr.)*
2-14	102.8	44.1	20,436	46.3	32
2-14	Acetylsalicylic acid begun (3.6 Gm. daily).				
2-21	100.0	44.5	20,364	45.8	34
2-28	100.0	44.3	14,389	32.5	26
3-8	99.6	Salicylate discontinued.			
3-14	99.6	46.4	16,971	36.6	17
3-15	99.8	Salicylate resumed (3.6 Gm. daily).			
3-21	99.4	45.9	14,987	32.7	15
3-29	Discharged on salicylates.				8
4-4	98.8	50.0	14,610	29.2	9

The sedimentation rate was measured by the Wintrobe method.

The above measurements were made serially in 2 subjects with acute rheumatic fever who were treated with salicylates. The 15 year old boy (table 1) was seen eight days after the onset of a sore throat and two days after the development of his initial attack of migratory polyarthritis. Beta hemolytic streptococci were cultured from the throat. Within 36 hours following the initiation of therapy with oral acetylsalicylic acid, the rectal temperature had decreased from 102.8 F. to less than 100 F. By the fifth day of treatment, the pain and swelling had subsided completely. The changes in the radiosodium space and sedimentation rate, however, reverted more gradually. When salicylates were discontinued on the twenty-third day, the radiosodium space and the sedimentation rate both increased again, but to a lesser degree than before. A second course of treatment after an interval of six days again produced a decrease in the radiosodium space and the sedimentation rate.

The 16 year old boy (table 2), following an initial episode of acute rheumatic fever three years ago, had been asymptomatic until three days before hospitalization, when he began to have polyarthritis. Forty-eight hours after therapy with acetylsalicylic acid was started, he was afebrile. Three weeks were required for the radiosodium space and the sedimentation rate to decrease to relatively normal values.

In studying the radiosodium space in individuals with various diseases other than rheumatic fever, we have not previously encountered a value greater than 30 per cent

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The Na^{24} used was supplied by the National Laboratory, Oak Ridge, Tennessee, on allocation from the U. S. Atomic Energy Commission.

*Research Fellow of the American Heart Association sponsored by the 20-30 International Rheumatic Fever Foundation.

Table 2
Radiosodium Space and Sedimentation Rate in Acute Rheumatic Fever in a Boy, Aged 16, Treated with Salicylates

Date	*Maximum Temp. (F.)*	*Weight (Kg.)*	*Radiosodium Space* (*ml.*)	(*% Body Wt.*)	*Sedimentation Rate* (*mm./hr.*)
3-1	103.8	51.1	18,318	36.8	34
3-1 Acetylsalicylic acid begun (3.6 Gm. daily).					
3-7	99.2	50.2	21,044	41.9	41
3-14	99.0	49.8	19,319	38.8	13
3-21	99.2	52.1	17,520	33.7	9

of the body weight in the absence of gross generalized edema. Although in the 2 cases just discussed, no clinical edema was apparent at any time during the period of observation, values for the radiosodium space rose as high as 46 per cent of the body weight. These values decreased as the sedimentation rate subsided.

There are two possible explanations for the high Na^{24} space: (1) Intracellular fluid might have migrated to the extracellular compartment during the acute phase of rheumatic fever. If this were true, we would have to assume that, in the first case, more than 6 liters of fluid shifted extracellularly. In the absence of clinical pitting edema, such an event is highly improbable. (2) It would seem more logical to interpret the data as indicating that the permeability of the affected tissue cell membranes to the sodium ion was abnormally increased. Whatever the specific injurious agent concerned in the pathogenesis of rheumatic fever might be, it produced cellular damage so that the differential permeability of the membrane was altered and the rate of exchange of sodium was increased.

The observed changes cannot be explained on the basis of an increased urinary excretion of radiosodium, since less than 1 per cent of the injected dose was excreted during the first three hours in both patients at various stages of the disease.

Although biopsies were not performed, it would be logical to suspect that the cells of the connective tissue system were primarily affected. The swollen, fragmented cells seen early in the course of the disease may be taken as objective evidence of a cellular defect.

In both cases a remarkable parallelism was observed between the sedimentation rate and the radiosodium space. The sedimentation rate has long been recognized as an index of tissue cell destruction. Its correlation with another presumed index of generalized tissue cell alteration strengthens our confidence in its reliability for clinical use.

In the first case, the discontinuation of salicylates during the third week of therapy was followed by an increase in both the sedimentation rate and the radiosodium space—changes which subsided when salicylate therapy was resumed. This sequence of events suggests that salicylates suppress certain physiologic alterations but do not cure the disease. The effect of salicylate therapy on the histologic lesion of rheumatic fever is not known.

Acute rheumatic fever resembles serum sickness in many respects. In experimental and clinical serum sickness, changes in the plasma volume and thiocyanate space have been interpreted as indicative of an alteration in the permeability of cell membranes[3,4]. These changes were thought to be related to immunologic phenomena. Experimentally, salicylates have been shown to suppress the formation of antibody[5]. It would be of interest to determine whether, in clinical rheumatic fever, the above mentioned physiologic changes can be correlated with the immunologic responses.

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As the physiology of the cell becomes better known, and the relation of chemical structure to cell and tissue is revealed, chemically induced mutation or cells may become possible. Certain hormones and other drugs are now known which affect the physical being as well as the mental attitude of an individual. The future may bring to us a series of drugs that will permit deliberate molding of a person, mentally and physically. When this day arrives the problems of control of such chemicals will be of concern to all. They would present dire potentialities in the hands of an unscrupulous dictator.—Roger Adams: Man's Synthetic Future, Science 115:163 (Feb.) 1952.

MESENTERIC CYSTS

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and
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Mesenteric cysts lie between the leaves of the mesentery of the large or small bowel, and are more common in that of the small intestine. True mesenteric cysts are to be distinguished from cysts arising from reduplications or diverticuli of the intestine, both of the latter having muscular and serous coats common to the intestinal tract. The literature on mesenteric cysts is sparse. Just over 400 cases have been reported, and we could find no definite information as to their incidence. Textbooks on pathology either omit the subject or simply mention that they do occur. Most papers are based on only 1, 2, or 3 cases, and many of these, undoubtedly, were not true mesenteric cysts. Ladd and Gross[1] were able to report only 8 such cysts from the Children's Hospital in Boston up to 1941. Since mesenteric cysts are congenital in origin, most of them are found in children. The youngest reported patient was 7 weeks old, the oldest a young adult, with the vast majority of cases occurring in children less than 6 years of age.

Pathology

Microscopically, these cysts are found to be extremely thin-walled. They are made up of connective tissue, and may or may not have a demonstrable inner layer of flattened glandular cells. There are neither serous nor muscular layers[2]. The contents may be serous or chylous, depending on the location of the cyst[3]. Those occurring in the jejunal mesentery contain chylous fluid, presumably due to the absorption of fat in this portion of the intestine. They vary greatly in size, the largest one reported filling the abdominal cavity and embarrassing respiration.

Etiology

There is considerable disagreement as to the origin of these cysts, probably due to the failure to distinguish between true mesenteric cysts and those of intestinal, infectious, or parasitic origin. The best explanation of their presence is that they arise from congenital rests of misplaced lymphatic trunk tissue which continued to proliferate and secrete, just as do inclusion cysts elsewhere in the body[4]. One other widely held theory is that they are the result of inflammatory obstruction of normally placed lymph channels, but the extreme youth of many of these patients would seem to discount the validity of that explanation.

Diagnosis

The diagnosis should not be difficult, but it is rarely made preoperatively, probably because of the rarity of the condition. In uncomplicated cases, symptoms are caused only by the size of the cyst, and the complaint is simply that of a painless, slowly enlarging abdomen, sometimes of two or more years' duration. When the cyst is so situated as to encroach on the bowel, symptoms of partial or, more rarely, complete intestinal obstruction may be encountered. A discreet mass may not be palpable, since the fluid in these cysts is seldom under pressure. If it is felt, it is usually to the right of the mid-line and freely movable, more so from side to side than up and down. In larger cysts a fluid wave can often be demonstrated. Flat films of the abdomen may show displacement of the bowel, usually upward and to the left. Films made after the ingestion or injection of barium may show the intestine coursing around the tumor mass[5]. Pneumoperitoneography may demonstrate the mass completely.

Complications other than intestinal obstruction are those due to rupture, infection, or hemorrhage into the cyst. These are usually encountered in older patients, and most frequently are diagnosed only at operation.

Treatment

The only treatment is surgical, and the procedure of choice is enucleation and complete removal. Two or three cases of apparent cure by simple aspiration are reported in the literature. In an uncomplicated unilocular cyst, the mesenteric vessels are all displaced to one side, the other side of the cyst being covered only by one leaf of the mesentery. In such a case it is not too difficult to incise the avascular mesenteric leaf and peel out the cyst *in toto* by blunt dissection, being careful not to damage the blood supply to the contiguous intestine. The resulting rent in the mesentery is then closed with a running suture which tends to

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act as a purse-string and take up the redundant mesentery. However, it is often not possible to strip the cyst from the blood vessels without damaging them, in which case the adherent bits of cyst wall may be left attached to the vessels and carefully cauterized with phenol.

Some authors have reported successful treatment of multilocular adherent cysts by marsupialization only, but this procedure should be used only as a last resort. In rare cases, the cyst cannot be removed without damaging the blood supply to the contiguous intestine, in which case resection and anastomosis are done without hesitation.

Report of a Case

A white baby boy, the youngest of three children, was born July 2, 1951, spontaneously at home, on a farm in southeastern North Carolina. The family history is noncontributory.

On July 9 his mother noticed that his abdomen was quite distended and realized that it had been so since birth. Several enemas failed to afford relief. She consulted her local physician, who told her that the child had been getting too much to eat and advised her to cut down on his rations. This program, accompanied by further enemas, was followed without beneficial results. On July 17 the child was admitted to the hospital, and we both saw him that same day.

Examination revealed a white male infant, 2 weeks of age, weighing 7 pounds and 8 ounces. The abdomen was extremely distended, and the veins over the upper abdomen and lower thorax were markedly dilated and engorged. When the child cried or exerted, he became extremely cyanotic. No masses could be palpated in the abdomen, but a definite fluid wave was demonstrable. Routine laboratory studies and icteric index were within normal limits. It was felt at this point that the child had cirrhosis with portal obstruction and ascites. Flat film (fig. 1) showed the entire abdomen to be distended and filled with an opaque mass which crowded the intestinal tract into the upper left quadrant and greatly restricted the capacity of the thorax.

On July 17 a paracentesis was done morning and evening, removing 100 and 150 cc. of fluid respectively. This fluid was pale yellow in color, did not foam, had a specific gravity of 1.001, 32 white blood cells per

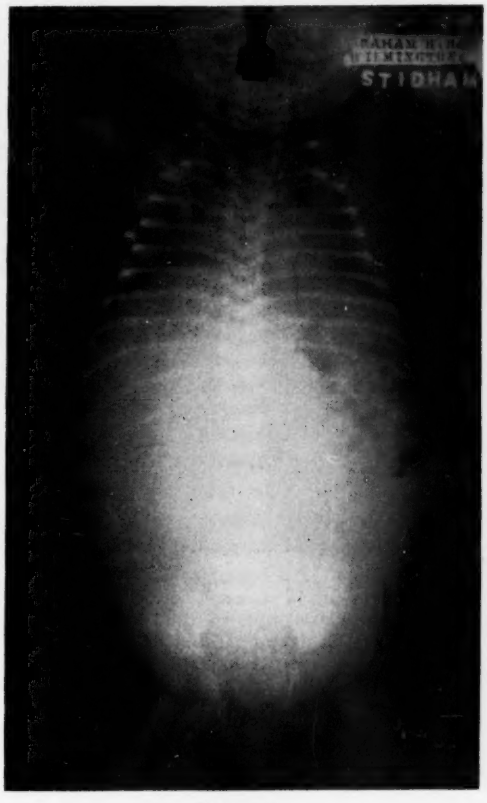

Figure 1.

cubic millimeter, and a protein content of 5 mg. per 100 cc. Culture was later reported positive for *Aerobacter aerogenes* and negative for tuberculosis. It was still thought that the fluid was ascitic in character. The next day 300 cc. of fluid was removed by abdominal paracentesis and 100 cc. of air injected for peritoneography. Roentgenograms were made with the child in various positions, with the results shown in figure 2. The diagnosis was now obviously a mesenteric cyst on the right, presumably in the mesentery of the ascending colon.

On July 20 a laparotomy was carried out under open drop ether anesthesia. The abdomen was entered through a right paramedian incision, which was later extended from the symphysis pubis almost to the costal margin. A thin-walled cystic mass which filled the incision and prevented observation or palpation of any other structures was encountered; it was too large to be delivered through

Figure 2.

the incision. A large bubble of air could be seen lying on the top of the fluid contents of the cyst. This air was released with a hypodermic needle, and as the cyst partially collapsed, the appendix and cecum came into view from the left upper quadrant. The cyst was now delivered onto the abdominal wall. The ascending colon and about 3 inches of terminal ileum were found to be coursing across and adhering to its upper left anterior surface. The presenting avascular side of the mesentery was incised and the cystic mass shelled out without too much difficulty. The blood supply of the cyst consisted of vessels equal in size to those of the right colon, and arose from these vessels. The vascular bundle constricted the cyst in its mid-portion sufficiently to give the bilocular appearance noticed in the roentgenogram. The rent in the mesentery of the terminal ileum and right colon, measuring some 15 cc. in length, was closed with a running suture of plain catgut. The intestinal tract now fell into its normal position, and what at first had been thought to be a malrotation was shown to be simply displacement upward and to the left. The abdomen was closed in layers, and convalescence was uneventful. The child was discharged on August 2, thirteen days after the operation. His weight on admission had been 7 pounds, 8 ounces, which dropped to 6 pounds the day after the operation, and returned to 6 pounds, 7 ounces, on discharge. Whereas preoperatively feedings had been taken reluctantly and in small quantities, now that the intra-abdominal tension had been relieved, feedings were taken avidly and in normal quantity.

The cyst measured in its partially collapsed condition (650 cc. of fluid had been removed preoperatively) 12 by 9 by 7 cm. The lower end was rounded where it encroached on the floor of the pelvis, and the upper end tapered up alongside the liver under the diaphragm. The microscopic report was "cubical and columnar glandular epithelium resting upon well organized connective tissue—serous mesenteric cyst." Although the cyst occupied the mesentery of the terminal ileum as well as the ascending colon, it must have arisen in the lower portion of the ascending colon, since it was there that it derived its blood supply.

Comment

As far as we can determine, this is the youngest reported patient to be operated on for mesenteric cyst, and one of the few cases in which an exact diagnosis was made preoperatively. The cyst was one of the

of the abdominal mass. She agreed, but preferred to have the prolapse attended to first. Consequently, a vaginal hysterectomy was performed. Convalescence was uneventful, and the patient was discharged, to be readmitted in two months. During this interval she remained asymptomatic, and examination on re-admission showed no change in her condition.

On December 30, 1948, under spinal anesthesia, the abdomen was opened through a right subcostal incision. A large tumor—bluish-red to bluish-gray in color, and with many small cystic areas—presented in the incision. The mass arose from the right lobe of the liver by a long broad pedicle. Transfixion sutures of no. 2 chromic catgut were inserted into the liver substance just proximal to the attachment of the pedicle. The tumor was amputated, and the sutures tied snugly. A few mattress sutures were used to

Fig. 2. Photomicrograph of section of heman-

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Hemangiomas of the liver are not uncommon[1]. They are usually small and asymtomatic, being an incidental finding at autopsy or laparotomy. Large hemangiomas of the liver are rare, there having been only 73 cases previously reported[2,3,4]. The majority of the cases have been treated surgically, but a few have been treated with irradiation when operation was deemed unsafe. The case being reported was successfully treated surgically.

Case Report

A 56 year old white multiparous housewife, was admitted to the hospital October 9, 1948, stating that "My womb falls out." Her history indicated that since the menopause five years before, she had noted increasing protrusion of the uterus from the vagina, accompanied by moderate urinary frequency and stinging. Bedrest always relieved the prolapse. A secondary complaint was of a "lump in my stomach." Approximately 12 years before she had noted a nontender mass, "about the size of a walnut" (3 cm.), in the right upper quadrant of the abdomen, just below the costal margin. She consulted her physician, who said that it was

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Fig. 1. Roentgenogram following partial evacuation of barium enema. Outline of the mass is indicated by arrows. Note hepatic flexure of colon lies well below crest of ilium.

of no importance. The mass slowly increased in size, but remained asymptomatic except for an occasional "heavy feeling" just below the ribs.

Examination revealed a well developed, well nourished, middle aged white female, who did not appear ill. Blood pressure was 170 systolic, 100 diastolic. The only abnormalities noted were: (1) A firm, non-tender, nodular mass that occupied the entire right upper two-thirds of the abdomen. The mass descended with each inspiration, and could be displaced medially a few centimeters. It was silent to auscultation. (2) The uterus, which was 4 cm. in diameter, could be easily pulled down into the vagina until the entire cervix protruded.

Accessory clinical findings: The urinalysis and hemogram were negative. The nonprotein nitrogen was 33 mg. per 100 cc., total serum protein 6.5 Gm. per 100 cc., and the Kahn test was negative. A scout film of the abdomen revealed a large mass in the right upper quadrant. Barium enema showed the hepatic flexure of the colon to be depressed by the mass (fig. 1). Intravenous pyelography was negative.

Course in hospital: It was explained to the patient that an exploratory operation should be performed to determine the nature

LOEFFLER'S SYNDROME

Two Case Reports with High White Cell Counts, Pulmonary Changes, and Ascaris Infestation

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Little factual knowledge has been added to Loeffler's original descriptions in 1932[1] and 1936[2] of the syndrome which bears his name. The syndrome is still ill defined, though many similar conditions—or possibly variants of the syndrome—have been described in the literature and are listed in table 1. All these conditions are associated with leukocytosis, pronounced and persistent eosinophilia of the blood, usually pulmonary changes, and, in a fewer number of cases,

Reports of Cases

Case 1

A 2½ year old white female was admitted to the Cabarrus Memorial Hospital on August 27, 1951, with a five day history of fever, dry cough, malaise, and anorexia. Expiratory wheezing was noted two days before admission. *Past history* disclosed the following facts: (1) the patient had been breast-fed for the first eight months, then bottle-fed until the present illness. Pasteurized whole milk was used until a few months prior to the onset of the present illness when raw milk from an untested cow was given. Solid foods were not begun until the patient was 4 months old, and were always taken poorly. Accessory vitamins were completely inadequate. (2) Development had been normal except that the child spoke only in monosyllables. (3) She had been "sickly and puny" all her life, and had eaten dirt at every opportunity since she was old enough

Table 2
Hematologic Findings
(Case 1)

Date	Red Blood Cells (millions)	White Blood Cells	Hemoglobin (Gm.)	Differential: Seg. PMN	Yonseg. PMN	Lymph.	Mono.	Eosin.	Baso.	Description of Smear
8-27-51	3.9	325,000	9.9	7	0	19	1	72.5	.5	2 polychromatic normoblasts 1 basophilic normoblast Slight anisocytosis and poikilocytosis Eosinophils appear mature.
8-29-51		67,000								
8-30-51		52,000		6	2	6	0	86	0	
9-1-51		73,000		6	1	12	0	81	0	
9-2-51		60,000		5	1	23	1	68	0	
9-3-51		24,950		10	0	43	1	45	1	
9-4-51		19,000		4	1	34	0	60	0	
1-19-52	4.30	9,000	10.7	37	1	40.5	4.5	17	0	Rare hypersegmented polymorphonuclear neutrophil. Eosinophils appear mature. Platelets adequate. RBC's microcytic, hypochromic, with slight anisocytosis and poikilocytosis.

examination was positive for ascaris and pinworm ova. The tuberculin skin test (O.T. 1:1,000) was negative, as were the Brucella agglutination, Trichinella skin test, serologic test, and routine urinalysis. The total serum protein on September 4 was 7.6 per cent, with an albumin-globulin ratio of 4.8:2.8.

Course in Hospital: Chest film on admission showed spotty bilateral confluent consolidations medialward. A follow-up film three days later was unchanged. The rectal temperature showed an afternoon rise to 100 or 101 F. Symptomatic measures were used, and hexylresorcinol was administered for ascaris. No parasites were passed. The child showed gradual c' ical improvement and was discharged c ne tenth hospital day, to be followed as an office patient.

Follow-up: The patient was clinically without complaint on January 19, 1952, five months after the initial visit. The liver and spleen were not palpable, and no adenopathy was present. Because of the blood count, Elixir Rubraton was given. It is significant that in the five month interval there had been two "asthmatic" attacks lasting a few days each, the latter being more severe but responding to penicillin and adrenalin in oil.

Case 2

A 3½ year old white male, brother of the patient in Case 1, began, on September 12, 1951, to have malaise, cough, anorexia, and fever. Five days later, on September 17, expiratory wheezing was noted, and since the sister (Case 1) was already hospitalized for a similar illness, this patient was also admitted to the Cabarrus Memorial Hospital. No vomiting, diarrhea, jaundice, or weight loss had been noted. This child's *past history* was not significant, except that he had also been a "dirt eater," and had passed large round worms prior to the onset of the present illness.

Physical examination on admission showed a 3½ year old boy in acute respiratory distress, similar in every respect to his sister on her hospital admission. The child's rectal temperature was 101 F. Other pertinent findings were a mild pharyngitis and asthmatic wheezes throughout the lungs, with coarse rales at both bases. The remainder of the examination was negative.

Accessory clinical findings: Hematologic findings in Case 2 are listed in table 3. Other admission laboratory studies showed a positive stool examination for ascaris ova. Tuberculin skin test (O.T. 1:1,000) was negative; the Trichinella skin test and routine urinalysis were also negative. Serologic test, Brucella agglutination, total serum proteins, and the albumin-globulin ratio were not determined.

Course in Hospital: Admission chest film showed accentuation of both hilar shadows, particularly the left; otherwise the parenchyma was clear. The heart and great vessels were undisturbed. The child was treated symptomatically, and showed marked improvement. Hospital discharge was allowed on the fourth hospital day, when he had been afebrile for 24 hours. Hexylresorcinol treat-

Table 3
Hematologic Findings
(Case 2)

Date	Red Blood Cells (millions)	White Blood Cells	Hemoglobin (Gm.)	Differential: Seg. PMN	Nonseg. PMN	Lymph.	Mono.	Eosin.	Baso.	Description of Smear
9-18-51		32,000		36	2	20	2	39	0	Slight anisocytosis and poikilocytosis, with microcytosis and hypochromia. Platelets adequate. Eosinophils appear mature.
9-20-51	4.04	10,400	10.3	15	2	34	1	48		
1-19-52	3.80	6,000	10.7	30.5	1	59.5	3	5	1	As above.

ment was to be given at home, and office visits for follow-up were to be made.

Follow-up: The patient had been without complaint during the five month interval, and on January 19, 1952, there was no adenopathy, or palpable liver or spleen. The blood findings are listed in table 3.

Comment

Case 1 is of great interest in that the initial white count was 325,000 per cubic millimeter. The highest white cell count that we have found reported in any of the 10 conditions listed earlier in this paper was 265,000 per cubic millimeter in a case of so-called eosinophilic leukemia[15].

In reviewing these cases in an attempt to arrive at a proper diagnosis, it becomes evident that the significant findings include a severe eosinophilia of peripheral blood and bone marrow, pulmonary changes, a septic type of fever, an allergic background, and infestation with ascaris.

We believe that for practical purposes the 10 conditions listed previously can be narrowed to two—namely:

1. *True leukemia,* in which characteristic leukemia findings on physical examination predominate, and which, though showing an eosinophilic leukocytosis early in the course of the disease, later shows myeloblastic leukocytosis.

2. *Loeffler's syndrome,* interpreted as showing at some time during its course pulmonary changes, leukocytosis, and eosinophilia. The etiology may be varied, but is believed to be some extraneous cause, as ascaris infestation, pollinosis, or other condition, superimposed on an allergic background[3]. It is possible that even the syndrome described by Perlingiero and Gyorgy[3] in 1947, and Zuelzer and Apt[4] in 1949, is but an elaboration or variant of Loeffler's original description[1,2]. Ascaris has been found to be the causative agent in many cases of Loeffler's syndrome[16], and Lavier[17] reported Loeffler's syndrome with hepatitis, there being liver fluke infestation in this case.

So-called familial eosinophilia may also represent another variation, in that members of certain families with allergic tendencies may react in a given manner to infection or to extraneous agents.

Since all ascaris infestation is accompanied by a certain degree of pulmonary change and eosinophilia, notably when the larvae are invading the body, and especially in the individual with an allergic background, pulmonary ascariasis easily gives rise to the picture described. Essentially, all pulmonary ascariasis produces, in varying intensity, the syndrome described by Loeffler, but not all cases of Loeffler's syndrome are due to ascariasis, as other parasites or pollen, as previously mentioned, may act etiologically.

Though it will be considered controversial by some, we would also classify the "eosinophilic lung" as being a variant of Loeffler's syndrome, the etiology possibly differing in that a pleuropneumonia-like organism is responsible in the former condition.

In the 2 case reports under discussion, there was no available evidence of liver involvement as described by Perlingiero and Gyorgy[3], and by Zuelzer and Apt[4], and the spleen was not palpable. Also, at the time these children were seen there was no lymph node big enough for biopsy, thus making Hodgkin's disease unlikely as a cause for the eosinophilia. Except for the initial white count in Case 1, moreover, there was little to indicate leukemia. In regard to this last

statement, it is of interest that the eosinophils seen, both in marrow smears and peripheral blood smears, were mature in appearance, being of normal size, with distinct nuclear lobulation, and well filled with normal-appearing granules.

These cases are reported as examples of Loeffler's syndrome, with ascaris infestation as the etiologic agent. It is believed that the symptoms encountered were in large part due to an allergic response to the ascaris toxin.

Follow-up findings on these two patients five months after their initial visit are of great interest. The hematologic findings on the two children are listed in tables 2 and 3.

Summary and Conclusion

Two cases of Loeffler's syndrome in children are presented, with ascaris infestation superimposed on an allergic background as the likely etiologic agent. One patient had an initial white count of 325,000 per cubic millimeter.

It is hoped that this paper will stimulate interest in the syndrome of leukocytosis and eosinophilia, with or without roentgenologic evidence of pulmonary change, and that the syndrome can be more clearly delineated, both clinically and descriptively.

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APLASTIC ANEMIA DUE TO GOLD THERAPY UNSUCCESSFULLY TREATED WITH BAL

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It is the object of this report to call attention to a case of aplastic anemia due to gold therapy which showed no response to large amounts of BAL.

Hematologic manifestations of toxicity in gold therapy are relatively rare. Aplastic anemia is the rarest and most serious of these manifestations.

Fitzpatrick and Schwartz[1] reviewed the literature in 1948 and found 18 cases of aplastic anemia due to gold therapy. To these they added 2 cases, bringing the total to 20. One of these cases was treated with BAL. In 1949 Indyk[2] reported a case of aplastic anemia due to gold, the second reported case of BAL used to treat aplastic anemia due to gold therapy.

Case Report

A white man, 47, was admitted on December 27, 1947, complaining of bleeding from the gums and nasal mucosa for two months. Eight years prior to admission he began to have rheumatoid arthritis, manifested by pain and swelling in the left knee. Later pain and swelling developed in a migratory fashion in the jaws, hips, shoulders, elbows, and fingers. He was completely incapacitated for eight years because of the arthritis. In March of 1947 he was started on gold therapy by his physician. He received 50 mg. of gold intramuscularly each week until 1000 mg. had been given. Leukocyte counts were done each week, and he showed no toxic manifestations. He obtained almost complete relief of the symptoms of arthritis.

Two months prior to admission to this hospital, and one month after the completion

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of the treatment, he noticed a slight rash on his face and legs. He noticed oozing of blood from the gums and the nasal mucosa on the slightest provocation. The hemogram at that time showed a profound decrease in all cellular elements. He was admitted to a civilian hospital and was treated with BAL, transfusions, crude liver injections, and penicillin. Two weeks after discharge from the civilian hospital he was admitted to this hospital. The rash had increased in severity and covered his entire body. The gums and nasal mucosa continued to ooze blood.

Physical examination

On admission, the physical examination showed a well developed, pale, white man who appeared chronically ill. The nares were filled with old dried, clotted blood. The right knee was swollen and tender, and its motion was limited. A diffuse dermatitis was present on the extensor surface of both upper and lower extremities. This was purpuric in character and violacious in color. The areas were confluent. The surface was crusty and scaly. The same type of rash was present over the back and the buttocks. There was no limitation of motion of the back or the phalanges.

Accessory clinical findings

The erythrocyte count was 3,500,000 per cubic millimeter, with a hemoglobin of 8.8 Gm. per 100 cc. The leukocyte count was 2,700 per cubic millimeter, with 20 per cent neutrophils, 74 per cent lymphocytes, and 6 per cent monocytes. The icteric index was 20.5 units. The prothrombin time was 29 seconds, with a control of 16 seconds. The nonprotein nitrogen was 36. A roentgenogram of the lower leg revealed a slight, soft, tissue swelling of the right leg. Bone marrow smear revealed the absence of proerythroblasts, erythroblasts, and normoblasts. A rare megakaryocyte was present. Myeloblasts and myelocytes were not seen. Rare juvenile cells and stab forms were present. The few sparse mature myeloid cells present showed toxic granules. There was no apparent reduction in lymphoid and reticuloendothelial elements. The bone marrow smear showed aplasia of the bone marrow.

Course in hospital

The patient received 39 transfusions of 500 cc. of whole blood, at a rate of about two transfusions per week. Over the five month period after admission to this hospital, he received 173 cc. of 10 per cent BAL, the total dosage being 17.3 Gm. The injections were given intramuscularly.

The hemorrhages from the nose and the gums became more frequent, and he had a number of areas of muscle soreness apparently due to hemorrhages. The erythrocyte count dropped from 3,610,000 to 1,370,000 in spite of numerous transfusions. The leukocyte count dropped from 4,000 to 1,000. The neutrophils were never higher than 17 per cent. After five months in the hospital with persistent skin rash, muscle soreness, and frequent hemorrhages, he acquired a severe frontal headache. The headache became so severe that it required Demerol for relief. He complained of more severe frontal headache, and the tenderness of the thighs and forearms became more pronounced. Ocular hemorrhages and edema of the eyes developed. The respirations became slow and stertorous, and the patient became comatose. His temperature continued to rise, and on May 21, 1948, reached a height of 105 F., rectally. The respirations became more shallow, and he died on May 22, 1948.

Autopsy findings

A postmortem examination was done. Fresh clotted blood exuded from both nares. Fresh hemorrhages covered the entire conjunctiva of the left eye. Dried blood was present about the gum margins. Numerous showers of petechial hemorrhages were present in the antecubital fossae, on the forearms, and over the anterior aspect of both legs. The ankles were moderately edematous. The entire parietal pleura showed showers of petechiae and frank hemorrhages up to 2 cm. in diameter. The lower lobe of the left lung was atelectatic. This lobe was deep purple in contrast to the remainder of the lung, which was the usual salmon color with anthracotic mottling.

The inner aspect of the parietal pericardium showed numerous hemorrhagic foci. Over the visceral pericardium and extending into the subepicardial fat and myocardium were numerous oval, splinter shaped, and linear blackish-blue hemorrhages. Numerous subendocardial hemorrhages were present.

The entire mesentery was studded with blackish hemorrhagic areas, varying from 1 to 3 cm. in diameter. The stomach was distended by coffee ground mucoid material, and shining through the serosa could be

seen hemorrhagic foci which "peppered" the mucosa of the stomach. There were similar isolated hemorrhagic phenomena throughout the small and large bowel and the retroperitoneal reflexions.

The presence of numerous capsular and subcapsular hemorrhages over the dome of the liver, especially in approximation to the diaphragm, made it impossible to separate the muscles of the diaphragm from the liver, even by sharp dissection. The central zones were bright red and stood out in contrast to the mottled peripheral zones, which presented a grayish-yellow appearance.

The spleen was densely adherent to the surrounding structures. Enlarged follicles could be made out here and there; however, for the most part the architecture was obscured and the trabeculae were not made out.

Both kidneys were enlarged. They were soft and grayish-red in color. The capsules were moderately adherent, leaving throughout a slightly granular surface which was studded with numerous bright red circular and linear hemorrhages. On cut surface the cortex showed bright red areas interspersed on a gray background. There were hemorrhages in both calyces and pelves, and in the left kidney was a semi-fluid, organized clot which occupied the interstices of the calyces, pelvis, and the proximal one-third of the ureter.

The bladder wall was "peppered" with bluish-black hemorrhages throughout.

The sternum, ribs, and upper portions of the femur revealed a relatively dry marrow, the fluid portions of which were muddy in appearance.

The splenic pulp was engorged with red cells, which crowded out the other elements. There was marked reticulo-endothelial hyperplasia in the central portion of the follicles. It is possible that the islands of small cells with very dark nuclei seen in the splenic pulp were islands of extra-medullary hematopoiesis.

Severe degenerative changes were seen within practically all of the renal tubules, but especially those of the distal convoluted tubules. The cells were swollen and granular, and appeared to be breaking down. In some cases the lumen was completely occluded, and in other cases there was a greater or lesser deposition of granular debris within the lumen of the tubules. The glomeruli themselves appeared well preserved, although there were some amorphous granular material and many red cells within the capsular space. The interstitial tissue was edematous and infiltrated with round cells and polynuclears and occasional plasma cells. There were many areas of interstitial hemorrhage. Hemorrhagic extravasation could be seen outside of the tubules, and many of the distal tubules contained intact red cells and granular, pink-staining debris.

The lymphoid sinuses were distended with blood, and there were many areas of hemorrhagic extravasation within the substance of the lymph node, whose architecture appeared to be obliterated.

The bladder lining was intact, although thin. There were many areas of hemorrhagic extravasation in the lamina propria which extended into the muscle bundles, sometimes to a depth including the entire bladder wall.

The marrow consisted mainly of fat. There were few cells present; those that were seen appeared to be lymphocytes. There were also many areas of hemorrhagic extravasation in the bone marrow.

Comment

Good results have been reported from the use of BAL (British anti-lewisite, 2, 3-dimercaptopropanol) in the treatment of dermatitis, thrombocytopenia, and granulocytopenia due to gold toxicity[3,4]. Fitzpatrick[1] reported a case of aplastic anemia due to gold which was treated with BAL. The patient lived for only six days after BAL was started. Fitzpatrick stated that the failure here did not imply condemnation of BAL. Indyk[2] reported 1 case of aplastic anemia due to gold treated with BAL. This patient had a temporary increase of polymorphonuclear leukocytes from 8 to 56 per cent. BAL was credited with stimulating the granulocyte series. Quantitative urine gold determinations were done, and BAL was attributed with causing an increased urinary gold output.

The patient in the present case was treated for five months with BAL. He received 17.3 Gm. of BAL during the five months while at the hospital, in addition to the BAL that he received at the civilian hospital. This dosage of 17.3 Gm. of BAL is the largest amount of BAL reported used in the therapy of aplastic anemia due to gold therapy.

Summary

A case of aplastic anemia due to gold

therapy is presented, bringing the total number of reported cases to 22. This is the third reported case of aplastic anemia due to gold therapy being treated with BAL. A large dose of BAL was used over a five month period of time, and there was no response to therapy.

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WHY PEDIATRIC ANESTHESIA IS DIFFERENT

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WINSTON-SALEM

During the past 10 or 15 years greater advancement has been made in pediatric anesthesia than in any other branch of surgical anesthesia. The following factors make pediatric anesthesia different from anesthesia in adults: the anatomy and physiology of the child; the psychic trauma that may result from terrifying experiences in the operating room; the frequent unpredictable effects of analgesics and hypnotics; the alarming susceptibility of infants and children to anoxia and asphyxia; the bad effect of increased dead space and resistance to respiration caused by improper equipment. Children also possess a narrow margin of safety between good surgical anesthesia and respiratory and cardiac arrest. Violations of the fundamentals of good anesthesia quickly produce a far graver condition in the infant than in the adult. It should be stressed here that anesthetic agents and techniques cannot be too carefully selected.

In the past few years the scope of pediatric anesthesia has greatly broadened. Many operations are performed around the head and neck. For these, the anesthetist must be removed from the usual position at the head of the table to the side in order to make room for the surgeon and his assistant.

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Read before the Southern Society of Anesthesiologists, New Orleans, Louisiana, April 11, 1952.

Intrathoracic operations upon infants and children are becoming more and more frequent, requiring methods by which one can not only administer positive pressure but also assist, or even control, respiration at times. Therefore, the old familiar open drop method must be replaced in many cases by newer techniques, which can be safely used if the fundamentals of good anesthesia are observed. The equipment brought into service must be different from that used in adult anesthesia. The anesthetist must at all times be careful in detail, gentle in procedure, and skillful in technique.

Premedication

Premedication in infants and children has been a controversial subject for many years. There have been as many varied opinions in regard to this matter as there have been writers. Some have insisted that infants should have no premedication at all, while others have declared that no conscious child, except in an emergency, should ever see the operating room or be submitted to the terrors associated with the induction of an inhalation anesthesia. The aforementioned emotional trauma has long been recognized by both psychiatrists and pediatricians. Such symptoms as increased fear, night terrors, dependency reactions, temper tantrums, and the like, have followed anesthesia in surgical procedures. Leigh and Belton[1] believe that the benefits of pre-anesthetic sedation outweigh their disadvantages, and hence recommend the use of an opiate along with a barbiturate, even in infants. Other anesthesiologists use the barbiturates alone in dealing with infants, and a combination of opiates and barbiturates in older children.

The latter procedure is used in the Department of Anesthesiology at the North Carolina Baptist Hospital. Moreover, Demerol is preferred to morphine because of the lessened occurrence of postoperative nausea and vomiting. Scopolamine is used in preference to atropine, because the former is superior to atropine in its effect upon the secretions of the respiratory tract and, in addition, affords a psychic sedation, which atropine does not. Avertin was once popular as a basal anesthetic at the Baptist Hospital, but, because of its long depressant effect and its potential toxicity, it has been supplanted to a great extent by the barbiturates. Sodium Pentothal or Surital, administered rectally, has been the preference recently.

No age or weight chart is used, but many physiologic, pathologic, and other factors are taken into consideration. The psychologic technique advocated by Jackson[2] has great value. Often it alone is sufficient. However, psychic therapy will not work with the emotionally unstable and apprehensive child, or with one who has had a former terrorizing experience with an anesthetic. With the latter, it is better to use a hypnotic, a narcotic, or a combination of both.

Induction

For induction, at the North Carolina Baptist Hospital, nitrous oxide or Vinethene is generally used. With both of these agents induction is smooth, rapid, and not too disagreeable for the young child.

Dangers to be Avoided

If you stand by the crib of a small child and note its respirations during quiet, normal sleep or deep anesthesia, one will be impressed by the small exchange of air or mixture of gases that occurs with each breath. One is also aware of the frailty of the muscles carrying on this process. Tidal exchange in an infant under an anesthetic is only a few cubic centimeters. Therefore, certain techniques and procedures must be used in pediatric anesthesia that are entirely different from those followed when dealing with adults. In order to adapt the technique to the special needs of children, the following dangers must be guarded against.

Obstruction of airway

The slightest obstruction of the airway must at all times be prevented. Anoxia is the commonest cause of death in anesthetized children. Even a minor obstruction will lessen the small tidal exchange of the infant and thereby produce anoxia and labored breathing. If upper respiratory obstruction occurs during anesthesia and cannot be immediately corrected, then an endotracheal tube should be inserted without delay. Anoxia is a far graver risk to the patient than any problem associated with intubation. If the tube is inserted gently and with skill, no irritation of the larynx or trachea should be produced. At the North Carolina Baptist Hospital, no serious complications have resulted from the use of endotracheal tubes in children. Only a few children have been affected with hoarseness following intubation.

Accumulation of carbon dioxide

Another advantage of this procedure is that it obliterates not only the anatomic dead space of the mouth and pharynx, but also the mechanical dead space of the face mask. In pediatric anesthesia it is important to eliminate as much dead space as possible, thus decreasing the accumulation of carbon dioxide, for the two go hand in hand. As previously stated, the tidal exchange in an infant under an anesthetic is very small indeed, and premedication in children adds to the problem. Even the smallest mask for anesthesia will double the dead space unless a high flow of oxygen is maintained to wash away the expired carbon dioxide. Respiratory acidosis from faulty elimination of carbon dioxide should be prevented by a reduction in dead space. Even the open drop technique, the oldest and probably the most common method of anesthesia for children, does not eliminate this problem. Therefore, the smallest possible mask should be used. It is our custom to employ a mask similar to the original Ferguson mask.Even then it is advisable to lift the mask off the face frequently for a few breaths in order to lessen the accumulation of carbon dioxide. A better method is to admit oxygen under the mask by means of a mouth hook or a nasopharyngeal tube at the rate of 1 or 2 liters per minute. If this procedure is not carried out, respiratory acidosis may result, seriously affecting the physiology of the child, which may be more disturbed and altered by the anesthesia than by the surgery itself. The physiologic balance must be maintained, because this factor is far more important in the infant or child than in the adult, since only small deviations from the normal can be withstood by the child for any length of time.

Mechanical resistance to respiration

Another detail in pediatric anesthesia to be carried out is to prevent as far as possible any resistance to respiration. Until recently all anesthesia equipment was constructed for adults. Such equipment should not be used for children. Gas machines for adult use, with their long tubes, directional valves, and large soda-lime canisters provide a resistance far too great for the small child to breathe against. Therefore, the circle type of filter should never be used. The to-and-fro filter, with its small canisters, can be used to better advantage because there is less resistance to

breathing than with the circle type. There is also less dead space with the to-and-fro type of filter.

Sound Technique

The most physiologically sound technique for the administration of gaseous mixtures is embodied in either the Ayre[3] tube, or the Stephen-Slater[4] non-resisting, non-rebreathing valve apparatus, both of which function with practically no resistance to either inspiration or expiration. They also prevent the accumulation of carbon dioxide by removing exhaled gases from the circuit completely. Both are used with an endotracheal tube. The Ayre non-rebreathing tube is inserted in the anesthesia feed line close to the angle piece of the endotracheal tube. It is a very simple apparatus consisting only of a T tube. On inhalation the patient breathes in gases from the anesthesia feed line and also some air from the open arm of the T tube. On exhalation the exhaled gases pass out of the open arm, thus minimizing resistance to respiration with efficient carbon dioxide elimination. The one disadvantage to this equipment is that there is no reservoir bag in the system, therefore making it impossible to carry out properly managed, assisted, or controlled respiration when the necessity arises. This problem is solved entirely by the non-rebreathing, nonresistant valve apparatus perfected by Stephen and Slater[4]. This contrivance is placed in close proximity to the endotracheal tube and connected by means of a small reservoir bag to the source of gases and vapors. On inspiration the gases are obtained from the reservoir bag; during expiration the delicate nonresistant valve to the bag is closed and the gases escape into the atmosphere of the operating room. If assisted or controlled respiration is desired, it can be carried out without difficulty by the prescribed technique of Stephen and Slater[5], which is as follows:

"On inspiration the thumb of one hand is pressed over the exhalation valve while the bag is being compressed with the other hand. On expiration the thumb is removed from the exhalation valve and the hand relaxed completely in order that the bag can refill from the gas machine."

This procedure can be carried on for hours if necessary, and allows safe anesthesia for even the smallest infant. The thin rubber valves of the Stephen and Slater apparatus are so constructed that resistance to both inhalation and exhalation is practically nil. Since dead space is almost entirely eliminated, there can be no accumulation of carbon dioxide. With this method one can anesthetize small infants for periods of two to three hours without any evidence of fatigue. Of the various techniques in pediatric anesthesia that have been employed at the North Carolina Baptist Hospital, that of Stephen and Slater has proved most satisfactory.

Other Considerations

Fluid therapy is far more important in the child than in the adult. The younger the infant, the less able he is to withstand fluid imbalance. Fluid therapy is used to maintain either a proper electrolyte balance or an adequate volume and content of circulatory blood. As the result of starvation or infection, children quickly develop metabolic acidosis. No anesthesia or surgery should be performed upon them until this condition has been corrected, whenever possible, with rectal or intravenous fluids. This preoperative treatment enables the infant to meet better the damaging effects of the anesthesia and operation.

It must also be remembered that infants withstand poorly the loss of small amounts of blood. The loss of 1 cc. of blood in an infant is equivalent to the loss of 20 cc. in the adult. The loss of 25 cc. of blood in the child is equivalent to the loss of 500 cc., or 1 pint, in the adult. Therefore, whenever an operation is to be performed upon an infant and any appreciable blood loss is anticipated, a cut down on a vein should be made preoperatively in order to take care of any blood loss as soon as it occurs. The amount of blood transfused should keep pace with estimated blood loss. If these simple precautions are taken with children, operative and postoperative shock is rarely encountered.

Summary

Pediatric anesthesia differs in several respects from anesthesia in the adult. Equipment and techniques must be carefully adapted to the special needs of children.

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RELAPSING FEBRILE NODULAR NONSUPPURATIVE PANNICULITIS
(Weber-Christian Disease)

Case Report

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D. M. ROSS, M.D.
and
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This clinical entity was first described by Pfeifer in 1892. In 1937 Bailey[1] reported the first death in which the entity was prominent and autopsy was refused. No autopsies on patients with this disease were reported until 1943, when Miller and Kritzler[2] reported their case. To date, about 44 cases, including three autopsies, have been reported.

The disease is characterized by a relapsing febrile course; associated with it are subcutaneous nodules, most often seen on the extremities, particularly the legs. It is several times more common in females than in males. The youngest person having this disease was 23 months old, reported by Larkin and colleagues[3].

The pathologic picture is one of acute or chronic inflammation in the interstitial tissue between fat cells, and capillary vascular damage. The adipose tissue shows various degrees of degeneration, necrosis, and regeneration. The end stage shows replacement fibrosis, which accounts for the dimpling grossly seen as defects in the subcutaneous tissues.

Various etiologic theories have been advanced, but no one accepted. Infection and allergy are most frequently given as causes.

The treatment as reported has been of little or no avail in altering the course of the disease. Included was 1 patient who was treated with penicillin and had complete remission several months later. Streptomycin used in one case did not change the progression of the disease.

Case Report

A 66 year old white man entered the hospital complaining of rheumatism of ten years' duration. About one month prior to admission he had rheumatic pain. Three weeks before admission he had a cold and cough that got worse, and four days prior to admission he noticed a rash marked by red, swollen, tender areas as big as the hand, most prominent on the right leg but also present on the other leg and arms.

Physical examination on admission revealed a temperature of 102.6 F., pulse 112, respiration 22, and blood pressure 120 systolic, 80 diastolic. The general physical examination revealed a chronically ill man with slight edema of the subcutaneous tissues, and multiple skin lesions. The head was generally normal. The mouth was edentulous. Percussion and auscultation of the heart were negative. Examination of the lungs revealed fine, moist rales in both bases. Palpation of the abdomen was generally normal. The genitalia were normal. The rectal examination revealed hemorrhoids and a small prostate. The extremities were generally normal in size and shape. The neurologic examination was normal. Examination of the skin revealed multiple raised, flat, tender lesions, measuring 1 to 10 cm., over the legs and arms. These lesions were all slightly indurated. The centers were not necrotic. The largest ones were on the right lower leg.

The laboratory examinations while in the hospital were as follows: On February 11, 1952, the red blood cell count revealed 4,120,000 cells with 12.3 Gm. of hemoglobin. The white blood cell count was 16,600. The differential showed 79 per cent neutrophils, 18 per cent lymphocytes, and 3 per cent monocytes. On February 21 the white blood cell count was 11,200, with 64 per cent neutrophils and 36 per cent lymphocytes. A urinalysis done on February 11 revealed a *p*H of 5.5, specific gravity 1.024, a trace of albumin, and no sugar; and microscopic studies revealed 3 to 6 white blood cells per high power field, with an occasional hyalin and finely granular cast. A repeat examination showed essentially the same findings, but an increase in white blood cells to 8 to 12 per high power field, with an increase in casts (mostly hyalin) from 3 to 6 per high power field. On February 18 a microscopic examination of the urine showed an occasional white blood cell and no casts. On February 24 microscopic examination of the urine showed an occasional white blood cell and no casts. The serologic analysis was negative. On February 15 the Fishberg concentration test showed: first specimen, 250 cc., specific gravity 1.021; second specimen,

From Alamance County Hospital, Burlington, North Carolina.

30 cc., specific gravity 1.020; third specimen, 70 cc., specific gravity 1.022. A phenolsulfonphthalein test was done. The half hour specimen of 50 cc. showed a 33 per cent return of phenolsulfonphthalein. The one hour specimen of 50 cc. showed 60 per cent return of phenolsulfonphthalein, and the two hour specimen of 70 cc. of urine had a return of 6 per cent phenolsulfonphthalein. Blood chemistry studies done in the hospital on February 15 showed a blood nonprotein nitrogen of 36 mg. per 100 cc., and a urea nitrogen of 18.5 mg. per 100 cc. A blood culture on February 18 showed no growth. The histopathologic examination of a skin lesion showed degeneration and regeneration of fat with inflammatory cells, mostly lymphocytes.

Roentgen examination of the chest on February 11 and an electrocardiogram on February 21 were normal.

The patient remained in the hospital for 14 days, and left the hospital slightly improved. The skin lesions were relatively unchanged. His temperature fluctuated throughout his hospital course, as did his pulse. He received generally nonspecific therapy without antibiotics.

Summary

This case is reported to add to the relatively few cases in the literature.

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This is a transitional period, and the spheres of influence of the three provinces of medicine (Science, Art and Business) show some signs in the future of being dominated by the last. What this would mean to medicine at Pennsylvania remains to be seen, but it is quite certain that our school could never have achieved its present standing with the resources available to it, without a spirit of unselfish cooperation and mutual esteem that seems incompatible with a coldly efficient business administration. — Carl F. Schmidt, M.D., Professor of Pharmacology, University of Pennsylvania, on "Medical Research," **Pennsylvania Gazette,** March, 1952.

EARLY NORTH CAROLINA MEDICINE

Physicians of the Colonial Period

Part I

DOROTHY LONG*

LEXINGTON, KENTUCKY

While in many cases we know little more than the names of the physicians of colonial North Carolina, concerning a few of them some information survives, though it often pertains to activities outside their profession rather than within it, and we remain largely ignorant of their professional practices and accomplishments. Dr. John King was apparently one of the few doctors to practice in North Carolina during the seventeenth century, the courthouse records of Edenton containing an itemized bill from him to Arter Workman, dated July 26, 1694[1]. A few years later, about 1702, Dr. Godfrey Spruill located at Edenton, and the Colonial Records of the state[2] yield a little information about him. The first volume of the Records contains an entry, dated 1703, from the vestry book of St. Paul's church, directing the employment of Dr. Spruill to treat Elinor Adams, who was indigent. Dr. Spruill was to be paid by the church for the medicine and for the care of the sick person, but Captain Thomas Blount was instructed "to endeavor to oblige the Said Elinor to Serve the Doctor for the Use of his House and nursing."[3] Another church record of 1714 was also preserved, directing that Dr. Spruill be paid the sum of twelve pounds for the cure of Ebenezer Aldridge[4].

Two other physicians are frequently mentioned in the Colonial Records, though more often in connection with politics than with medicine. Indeed, in whatever ways the early doctors of our state may have been deficient, they were certainly interested and active citizens. Dr. George Allen, for example, was active politically, though during the first years of his residence in North Carolina he was in constant trouble with the authorities, and in none too good repute with at least some of the other citizens of Edenton. A letter written in 1725 by Thomas Bailey, a minister, protesting the action of Governor Richard Everard in refusing him the key to

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the church and forbidding him to preach, mentions that he found Everard in company with Dr. Allen, "a man of vile character and lately condemned at Williamsburgh for cursing King George and Mr. Drysdale who is governor of Virginia."[5] Later, Dr. Allen was again indicted for cursing the king, according to the records of the general court, and before this case was settled, he got into still more trouble, this time with Governor Everard, who was probably at least as much at fault as the fiery physician. The Records do not give the full story, but we do learn from them that Dr. Allen, armed with two pistols and a sword, had at one time confronted the governor and threatened to kill him, and that in April, 1727, Everard had called Dr. Allen from his home and struck him several times with his cane. Allen was indicted for assaulting the governor, and appeared in court in October, 1727, wishing to give evidence to the grand jury against Everard. Being refused, he turned to the people in the courtroom, complaining of this treatment and saying that he could not get common justice. Ordered to be taken into custody, Dr. Allen fled to his home and threatened to shoot the provost marshal who came after him. However, when the case finally came to trial in the following year, he acknowledged himself guilty of "affronting and abusing the court, and was discharged of the indictment."[6]

Whatever their opinion of his quarrel with Governor Everard may have been, some of the provincial officials were more sympathetic toward Dr. Allen's difficulties with the next royal governor, Burrington. In 1732 a formal complaint by the attorney general and two members of the council mentioned among other injustices that Governor Burrington had assumed power to commit any person to jail for 12 hours without showing cause, and that he had confined Dr. Allen in prison for 10 hours in this illegal manner[7].

It may be that Dr. Allen learned to control his impetuous temper, or perhaps others were beginning to share his independent spirit. At any rate, by the year 1735 he was a member of the general assembly, representing Chowan county. He served on several committees of the assembly, and was one of the members who frequently delivered messages to the upper house. He is also known to have served with Captain John Sampson's company of militia during the Spanish alarms of 1748. The one available record relating to his medical activities is his testimony in an investigation of the death, in 1728, of Colonel William Reed, a member of the council, and that merely states that a messenger, who had been two days on the way, came to tell Dr. Allen that Reed was dangerously ill, and that when the physician arrived at the home of his patient, Mrs. Reed told him that her husband had died the preceding day and had been buried[8].

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Professional Freedom: Mill wrote that "there is a limit to the legitimate interference of collective opinion with individual independence"; and also this: "But where everything is done through the bureaucracy, nothing to which the bureaucracy is really adverse can be done at all." There is little doubt that very many doctors, especially in general practice, do feel that the collective opinion which brought in the National Health Service has thus interfered too far with individual independence. And when we witness the weed-like growth of the bureaucracy we cannot help but wonder how long it will be before the sweet flower of liberty will have the life choked out of it. It is not without significance that in reaction to the N.H.S. a voluntary association of medical men and women has chosen the title of Fellowship for Freedom in Medicine to signify its aims . . . Doctors of all people want to see the evils of poverty, ignorance, and fear overcome, for these are prolific breeders of ill-health and unhappiness. But when we see the Welfare State turning itself into a wet-nurse for all and sundry to suck itself dry we may well ask whether a people forced into such infantile dependency will ever grow up with a sense of adult responsibility. Bernard Shaw, Dr. Fox reminds us, hit the nail on the head when he said: "Liberty means responsibility. That is why most men dread it."—Editorial, Brit. M.J. 2:457 (Aug. 25) 1951.

How afraid we are nowadays of being sentimental, that is, of showing sentiment or feeling. The fear of it can be carried too far—it is a matter for each to decide—but we cannot allow the public or our patients to believe that as a profession we are unfeeling. Laymen incline to imagine that a medical training produces an indifference to suffering, a hardness of heart, but nothing is farther from the truth. Of all people, a medical man must not wear his heart on his sleeve, but in the presence of sickness he may prove to be the only practical sympathizer about. For that is a privilege of his calling; he is literally in his element.—Sir John Parkinson: The Patient and the Physician, Ann. Int. Med. 35: 310 (Aug.) 1951.

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"The prime object of the medical profession is to render service to humanity; reward or financial gain is a subordinate consideration. Whoever chooses this profession assumes the obligation to conduct himself in accord with its ideals."—Principles of Medical Ethics of the American Medical Association, Chapter 1, Section 1.

JULY, 1952

DR. OLIN WEST

Dr. Olin West, who was secretary and general manager of the American Medical Association from 1924 until coronary heart disease forced him to retire in 1946, died at his home in Nashville, Tennessee, on June 20—three weeks before his seventy-eighth birthday. The service that Olin West has rendered to medicine in America is so great that it is hard to evaluate. Those who knew him instinctively liked and trusted him. Even those who did not agree with him never questioned his intellectual honesty. He had the gift of friendship as did few men. His rugged honesty, his clarity of vision, and his genial personality made him a born leader. His talents of leadership were always exercised for what he believed to be the best interests of the whole medical profession.

Even after he resigned as secretary and general manager, he was chosen unanimously as president-elect of the A.M.A. in July, 1946; but resigned early in 1947, since it was impossible for him to meet the physical demands that the position entailed.

The fact that his paternal grandfather was a native of Robeson County adds to the pride and affection felt by North Carolina doctors for Olin West. On their behalf the NORTH CAROLINA MEDICAL JOURNAL extends heartfelt sympathy to the surviving members of his family, and agree with the *Journal of the American Medical Association* that "His record of service to mankind is an enviable one, and may in part serve as a source of consolation to the bereaved members of his family."

* * *

YOUR MONEY'S WORTH IN HEALTH

One of the best pieces of literature yet issued by the Public Relations Department of the American Medical Association is entitled "Your Money's Worth in Health." It shows graphically that the public is getting more for the money spent on medical bills than ever before; that the cost of medical care has not risen in proportion to the cost of bread, milk, fuel, and other living expenses; and that medical care still takes only four cents out of every dollar of the average family's income — the same proportion as 20 years ago. Furthermore, owing to new remedies and better techniques, the total doctor's bill is less today than it was 15 years ago.

This pamphlet shows that, even with the increased costs of hospital care, the average hospital bill was less in 1951 than in 1935, because the average stay in the hospital in 1935 was 21 days, in 1951, 8 days. Many of the new drugs are quite expensive; but through improved production methods—and competition — they are steadily becoming cheaper. The cost of the most useful of the antibiotics, penicillin, for example, was reduced by 99 per cent between 1945 and 1951.

This pamphlet, together with the one issued last year, "A Doctor for You," should prove to be very effective reading material for doctors to keep on their reception room tables.

* * *

A BRITISH SECRET CANCER CURE

An editorial in the *British Medical Journal* for June 7 points out one danger of medical practice under government control. *Picture Post* — which is apparently a sensational popular magazine—in September, 1950, had an article about a cancer remedy which had been handed down from a Welsh father to his son, Mr. Rees Evans. Instead of ignoring or denouncing the *Picture Post* story, Mr. Aneurin Bevan, who was then Minister of Health, set up a special committee in order that the Rees Evans "cancer cure" should be "fully and fairly investigated." As the *British Medical Journal*, with characteristic British understatement, observed, "This seemed to many to be rather an unusual compliment to pay the purveyor of a herbal secret remedy, especially when there existed in the Imperial Cancer Research Fund a well tried machinery for investigating cancer cures."

The report of the committee was completed some time ago, and—since the investigation was paid for out of public funds—it was reasonable to expect that it would be published. "It was peculiarly disappointing to hear the new Minister of Health, Mr. Iain MacLeod, say: 'The report has now been received, and in the normal way I should have proposed to publish it; but as it contains information supplied to the committee in confidence by Mr. Rees Evans and by patients and their relatives I cannot do so.' "

Mr. MacLeod told the House of Commons "that the committee has advised him that the claims made do not warrant further investigation and that he has accepted that advice." Apparently, however, Mr. Rees Evans expects to continue to use his remedy, saying, "I know that the opinion of this committee will not prevent others giving my treatment a real and thorough investigation." To which the *British Medical Journal* replies, "No one should be allowed to keep secret the constituents of a preparation he believes will cure, even partially, one of the most dread diseases of modern times."

It is a sad commentary on the British National Health Scheme that its first Minister of Health should have given so much consideration to a secret cancer remedy, and that the present one apparently pays Mr. Rees Evans the compliment of feeling bound to keep his remedy in professional confidence. It has not been long, however, since a United States senator from one of the New England states stoutly defended an irregular Massachusetts practitioner and attacked the Massachusetts Medical Society for disciplining him[1]. The senator even used the Congressional Record to give the doctor a free advertisement. Evidently politicians on both sides of the water are equally incompetent to control the practice of medicine.

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* * *

"OUTMODED MEDICAL ETHICS"

Under the above title, Editor Peter Pineo Chase, in the *Rhode Island Medical Journal* for March, comments upon a recent book by a Chicago architect written to condemn the medical profession for refusing to accept a "new" treatment for arthritis, which "was not sanctioned by the medical profession because it did not have the 'authority' of publication in a recognized medical magazine." The architect-author claims that he was cured by this remedy, hence his interest in "the problem of outmoded ethics."

To North Carolina doctors the idea of an architect having the temerity to speak of ethics is ridiculous, for they have not had time to forget the type of ethical conduct displayed by the architects who were not given the contract for planning the new Wake Forest College in Winston-Salem. Although Mr. Larsen had been employed to do the job, and although the Building Committee of Wake Forest were well satisfied with his proposed plans, he was criticised and even abused in the press and in various speeches by those architects who were not consulted in the matter.

To a medical man it seems that an exact analogy would be for the doctors who were not employed to treat some prominent patient to publish articles and make speeches all over the state—and even over the nation—denouncing the methods used by the attending physician.

One may be pardoned for wondering what —if any—Principles of Ethics the architectural profession follows. In North Carolina, at least, if architects ever had any ethics, they were apparently outmoded—or abandoned — after the Wake Forest plans were announced.

Committees and Organizations

Board of Medical Examiners of the State of North Carolina

The present Board of Medical Examiners of the State of North Carolina during its short term of office has experienced so much difficulty in narcotic violations that it thought it would be helpful to the physicians of our state to have an article prepared by the United States Commissioner of Narcotics to bring pertinent facts to their attention in regard to the handling of narcotics. It is the pleasure of the board to present the following article.

* * *

THE ROLE OF THE PHYSICIAN IN FEDERAL NARCOTIC LAW ENFORCEMENT

H. J. Anslinger*

The drugs covered by the Federal narcotic laws are those included within the classification "opium, coca leaves, and any compound, manufacture, salt, derivative, or preparation thereof," and any other drug officially found and proclaimed to have addiction liability comparable to that of morphine or cocaine. Thus the laws apply not only to all forms of opium and the well known alkaloids and salts obtainable from opium and coca leaves, such as morphine, codeine and cocaine, but also to certain synthetic analgesic drugs, such as Demerol, methadone (Dolophine or Adanon), Nisentil and Dromoran. The barbiturates are not included under the narcotic laws of the United States.

Provisions of Federal Statutes

The two principal Federal narcotic statutes are the Narcotic Drugs Import and Export Act, as amended, and the so-called Harrison Narcotic Law, now incorporated in the Internal Revenue Code. The Narcotic Drugs Import and Export Act authorizes the importation of such quantities only of opium and coca leaves as the Commissioner of Narcotics shall find to be necessary to provide for medical and scientific needs. Importation of any form of narcotic drugs, except such limited quantities of crude opium and coca leaves, is prohibited. Exportation of manufactured drugs and preparations is permitted under a rigid system of control designed to assure their use for medical and scientific needs only in the country of destination.

The Harrison Narcotic Law as re-enacted in the Internal Revenue Code is designed to direct the manufacture and distribution of narcotic drugs through medical channels to consumption use for medical purposes only. This statute and the regulations promulgated thereunder more directly affect the practicing physician.

In order to prescribe, administer, or dispense narcotic drugs in the course of professional practice, the physician is required to register in Class IV under the Harrison Narcotic Law with the Collector of Internal Revenue on or before July 1 of each fiscal year, and to pay an occupational tax of $1.00. As qualification for such registration, he must be entitled under the laws of the state in which he practices to prescribe, administer, or dispense narcotics to patients in the course of his professional practice. This usually means that the physician shall hold an unrevoked and unrestricted license to practice medicine in the particular state.

After being registered, the physician may supply a narcotic drug for the medical need of a patient by issuing a prescription (written for the particular patient) which is filled at a registered drug store, or the physician may directly administer or dispense the narcotic drug to the patient. It should be noted that a narcotic prescription may not be used by the physician as an order form to obtain a supply of narcotics from a pharmacist for the physician's general office use. To obtain a supply of narcotic drugs for direct administration or dispensing, the physician must use an official order form which is obtainable from the Collector of Internal Revenue. Registered manufacturers or wholesale dealers are eligible to fill such order forms. One exception is made; a person qualified only as a retail dealer (druggist in Class III) may supply a registered practitioner on an order form, in quantities not exceeding one ounce at any one time, with aqueous or oleaginous solution in which the narcotic content does not exceed a greater proportion than 20 per cent of the complete solution, to be used in legitimate office practice.

Of special importance to the physician is that limitation in the Harrison Law that all prescribing, administering and dispensing of narcotic drugs shall be "in the course of

*United States Commissioner of Narcotics and Representative of the United States on the Commission on Narcotic Drugs of the United Nations.

his professional practice only." The United States Supreme Court has made it clear that the prescribing or dispensing of narcotic drugs by a physician, for the purpose merely of gratifying or perpetuating drug addiction, does not constitute "professional practice," and that the physician who prescribes or dispenses narcotics for such purpose is violating the law.

Irregularities by Physicians

It is a tribute to the medical profession to state that the great majority of its members have observed and have continued to observe this limitation and do not prescribe or dispense narcotic drugs for the purpose of gratifying drug addiction. However, a few physicians have disregarded the Court's ruling and the high standards of the profession by causing the sale to addicts of substantial quantities of morphine or other narcotics for the sake of financial gain. An example of such a case is that of a physician, himself an addict, who was practicing in an eastern city, and who during a period of nine months issued 6,340 alleged prescriptions for addicts, calling for a total of 177,049 tablets of morphine, Pantopon and Dilaudid.

This instance illustrates the more flagrant type of cases, fortunately comparatively few in number, in which there must be prosecution of the offender. There are rather more numerous cases in which the physician, without criminal intent but through carelessness or negligence, affords the opportunity for diversion of narcotic drugs to improper uses.

Failing to furnish written prescription

The outstanding irregularity noted is the practice on the part of some physicians to telephone to the druggist an order for narcotic drugs without furnishing the required written prescription. A narcotic regulation, (Article 172 of Narcotic Regulation No. 5) provides that in an emergency a druggist may deliver narcotics through his employee or responsible agent pursuant to a telephone order (of the physician) provided the employee or agent is supplied with a properly prepared prescription before delivery is made, which prescription shall be turned over to the druggist and filed by him as required by law. Both the Harrison Law and the Uniform State Narcotic Law require that the sale by the druggist be made only pursuant to a written prescription, which must be kept on the druggist's file. When the physician fails to leave the written prescription with the patient, the druggist who knows the requirement but does not wish to offend the physician sometimes takes a chance and delivers the narcotic drug without the prescription. In doing so, the druggist is violating the law, and it seems that the physician also, under these circumstances, is violating the law because he aided and abetted the unlawful sale.

There are numbers of reports in the Narcotic Bureau showing how drug addicts and peddlers take advantage of this irregular practice to secure themselves a supply of narcotic drugs. A typical example is that of an addict peddler in a Texas city who telephoned to several drug stores, representing himself to be a physician, and ordered for an alleged patient some magnesium sulphate, sterile cotton, and several 1/16 grain Dilaudid tablets, asking that the order be delivered to a certain address. When the delivery boy approached the address given with the package, he would be intercepted by a man who introduced himself as the physician, took the package and paid for it, and stated that he would furnish the prescription later. No prescriptions were furnished, and before the offender was finally apprehended he had secured from local druggists an appreciable quantity of Dilaudid tablets. Practitioners should comply strictly with the regulation and, when an emergency demands the telephone order, should see to it that the written prescription is available to the druggist no later than the time of delivery of the drug.

Prescribing for patients "sight unseen"

Sometimes a physician will allow himself to be imposed upon by an addict's story to the extent that he issues prescriptions for narcotic drugs for a "patient" whom he has never seen. In the fall of 1948, a woman addict called a local physician by telephone from a New Orleans drug store and represented that her husband and her mother were suffering from severe attacks of diarrhea. Actually, the woman was seeking to obtain paregoric for her own addiction, and she suggested to the physician that some such "medicine" be prescribed for her husband and her mother. The physician then authorized the pharmacist by telephone to fill two prescriptions, each for one ounce of tincture of opium (laudanum); the druggist delivered the two ounces of laudanum to the woman and the physician later transmitted

to the druggist the signed written prescriptions. Later investigation disclosed that the "patients" were nonexistent, and that the woman used this method of obtaining the drug to gratify her addiction.

An unusual method successfully used by addicts to impose upon the credulity of physicians was disclosed by an investigation made in San Francisco in 1943, several physicians having been persuaded by addicts to write prescriptions for morphine in quantities ranging from 30 to 80 1/4 grain tablets. The addict would call on a certain physician and represent that his wife was en route from Salt Lake City or some other eastern point to San Francisco in care of a nurse; that the wife was in very bad physical condition, necessitating the use of morphine. The visitor would represent that the particular physician had been highly recommended and that he wanted the physician to take care of his wife upon her arrival in San Francisco, placing her in a hospital if necessary, and possibly performing an operation. The visitor would then offer to pay the physician a retainer in a sum of from 20 to 50 dollars. The visitor would then inform the physician that his wife was presently in Elko or Winnemucca, Nevada; that she had been obliged to leave the train there because the supply of morphine that had been given the nurse at the time of departure was exhausted. The visitor then prevailed upon the physician to write a prescription for morphine which he said he intended to send to the wife by air mail. On at least one occasion the physician was so taken in by this story that he not only furnished the prescription but retained a room in a local hospital for a week, after which he began to realize that he had been victimized.

Prescribing for patients "on way to institution"

Another method by which physicians are persuaded to prescribe or dispense narcotics for addicts is that of claiming that the addict is on his way to some institution for the purpose of taking treatment, and requires maintenance dosage of morphine until he can reach the institution. Sometimes these addicts will exhibit to the physician a partially filled out application blank for admission to the institution, and they will offer ingenious excuses for delay in actually leaving, to secure continuation of the drug dosage as long as possible. In most of these cases, the addict has no intention whatever of going to the institution for treatment. In one case in which an addict had actually completed arrangements with the Public Health Service to enter a hospital for treatment, he prevailed upon a physician in Baltimore to furnish him narcotic dosage for a period of about four months upon various excuses for delay, and it was not until a narcotic agent visited the physician to point out that he was being imposed upon that the physician discontinued this dosage, requiring the addict forthwith to go to the institution for treatment.

Other irregularities

There are other types of irregularities, less frequently encountered but more or less likely to result in the diversion of narcotic drugs to improper uses. The issuance of several narcotic prescriptions at the same time but postdated, when the physician or the patient is leaving town, is certainly not authorized, as the law requires that a prescription for narcotic drugs shall be dated and signed on the date when issued. The practice of leaving several prescriptions, signed in blank, with an office assistant or with a pharmacist to be filled in later for patients is obviously dangerous and is unauthorized. Care should be taken in writing each narcotic prescription to see that there is no opportunity for any person to raise the amount which the physician intends to prescribe. Care should also be taken by the physician to safeguard his prescription blanks, as drug addicts seek to obtain such blanks on which they may be able to forge a narcotics prescription.

Even in the case of a patient suffering chronic pain from an incurable disease such as cancer where the physician finds it necessary to prescribe narcotics for palliative treatment, he should exercise care to see that no greater quantity of narcotic drug is made available than is necessary to meet the bona fide medical needs of the patient. There have been instances where the physician has been careless as to the quantity of narcotic drug prescribed, resulting in the accumulation of an excess supply by the patient or the person in charge of him, and such excess has been found to have been sold to others to gratify addiction.

Conclusion

The addict and the peddler are ingenious in devising means of securing a supply of

narcotics by imposing upon the physician or by taking advantage of the physician's carelessness or negligence. It is respectfully urged that the physician should be on guard against such attempts, and should carefully observe the regulations which are designed to diminish the opportunity for diversion of narcotics with minimum interference with the physician's professional activities.

In concluding this discussion, I wish to express the appreciation of the Bureau of Narcotics for the hearty cooperation it has received from the Board of Medical Examiners of the State of North Carolina, and its secretary, Dr. Joseph J. Combs. Under statutory authority, the Bureau reports to the Board the facts in cases of narcotic convictions of physicians, or evidence indicating drug addiction on the part of physicians, in North Carolina. The Board examines such cases and generally takes such action as will tend to obviate future narcotic irregularities on the part of offending physicians.

BULLETIN BOARD

PRESIDENT'S MESSAGE

As I take over the duties of the presidency of the Medical Society of the State of North Carolina, I wish to express my deep feeling of appreciation to my colleagues for the honor they have thus bestowed upon me. I am fully conscious of the responsibilities of the office, and shall do my best to discharge those duties efficiently and with the best interest of the people of North Carolina and the Medical Society of the State of North Carolina always in mind. The splendid job of organizing the central office in Raleigh that has been done by my immediate predecessors, by Dr. Hill, the secretary-treasurer, and Mr. Barnes, the executive secretary, makes my task easier.

There are several things that are of primary concern to us this year. First, and I think foremost, we must use every effort to make the Medical Society Insurance Plan for full payment of professional fees for persons of limited income a success. The Hospital Saving Association now has this, "The Doctors' Program," ready to sell. The number of doctors who are willing to support this, our own plan, is now of critical importance. At this date a little more than one half of the physicians in active practice have signed the participating agreement. Many more should and must sign, however, if the plan is to be a success and our Medical Society is to fulfill its promise and obligation to the people of North Carolina. The plan may not be perfect, and it may not meet the needs and wishes of all the public or all physicians, but it is the culmination of several years of conscientious study and work by Dr. Hart's committee. Let us all co-operate and give it a trial. Ample provision is made for the correction of any inequalities or shortcomings that experience and time may reveal.

Next, I think it is of immediate importance that we continue to give thought to our public relations. The threat of federalized medicine through compulsory health insurance has been temporarily dissipated, but the issue is not dead—nor will it die as long as the cost of medical and hospital care is a major problem in the experience of so many people. The solution to this problem is the spread of prepayment voluntary insurance to cover the cost of medical care.

There are many more problems involved in good public relations than the cost of medical care, and of these we are becoming more conscious every day. Our Public Relations Committee is planning a strong and effective program for the present year. You will hear more of their plans later, and I invite the co-operation of every member of the Society with the activities of this committee.

In conclusion, may I say that the administrative officers of the Medical Society are your servants in the management of the affairs of the Society. We ask your co-operation, but we also invite your criticism. The doors of the administrative offices are always open to each and every member of our Society.

J. STREET BREWER, M.D.

NEWS NOTES FROM THE DUKE UNIVERSITY SCHOOL OF MEDICINE

March of Dimes grants totaling more than $26,000 will enable Duke University doctors to continue the fight against polio. The announcement was made jointly by Duke President Hollis Edens and Basil O'Connor, president of the National Foundation for Infantile Paralysis.

The foundation has awarded Duke a grant of $24,560 for the making of medical movies under the

direction of Dr. J. E. Markee, professor of anatomy, a pioneer in the use of audio-visual aids in medical education.

The foundation has also announced another grant of $2,150 which will enable Duke Hospital to provide more physical therapy service for Lincoln Hospital.

Duke's School of Physical Therapy will be able to provide physical therapy service for hospitalized and ambulatory Negro polio patients as well as additional training facilities for student physical therapists.

Directors of the program will be Dr. Lenox D. Baker, professor of orthopedic surgery, medical director; and Miss Helen Kaiser, associate in physical rehabilitation, technical director.

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Five Duke University doctors are among some 206 scientists throughout the nation who have just received U. S. Public Health Service grants, **Public Health Reports** revealed recently.

The Duke grants, totaling $24,499, are for four of 176 research projects being supported by United States Public Health Service at 100 institutions in 34 states and three foreign countries.

The Duke investigators and their grants are Doctors Frank L. Engel and Jack D. Myers, associate professors of medicine, $10,000 for support of studies on the effects of hormones and metabolic factors on certain liver functions; Dr. Grace P. Kerby, associate in medicine, $3,780, for research in Pyrogen disappearance from the blood stream; Dr. Samuel P. Martin, assistant professor of medicine, $7,479, for study of the effect of bacterial products on human leukocytes; Dr. William W. Shingleton, associate in surgery, $3,240, for studies in the modification of resistance in the sphincter of Oddi.

Another Duke physician, Dr. James B. Golden, assistant resident in neuropsychiatry, has received a United States Public Health Service research fellowship award for research studies under the direction of Dr. Barnes Woodhall, professor of neurosurgery.

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A total of 100 hospital administrators from throughout the South met at Duke Hospital for the Seventh Southern Institute for Hospital Administrators, July 14-18. The program was designed to meet the needs and interests of administrators of the southeast in providing an over-all view of hospital administration, primarily as a basic refresher course.

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Duke Hospital has just opened a new speech service for harelip and cleft palate children of North Carolina, according to an announcement by Dr. Murray M. Halfond, medical speech pathologist. Six children from throughout the state are attending a six week summer session under the direction of Dr. Halfond. The program has been arranged by the Social Service Department of Duke Hospital in cooperation with state agencies.

All six youngsters have undergone plastic surgery at Duke, and speech treatment has been recommended.

North Carolina Heart Association

Rounding out its fourth year of financial support for research into heart and blood vessel diseases, the American Heart Association has approved 72 grants-in-aid totaling $361,522.50, according to an announcement by Dr. Irving S. Wright, president. Five of these grants, totaling $25,305, are to institutions in North Carolina. The investigations are also being conducted in 19 other states, the District of Columbia, Montreal, and Beirut, Lebanon. Dr. Wright said the latest awards raise to over four million dollars the combined total spent for cardiovascular research projects by the national office and its state and local affiliates since the Association was reorganized as a voluntary health agency in 1948.

In addition to the grants-in-aid, the American Heart Association's research program includes 38 Established Investigatorships and Research Fellowships totaling $191,650, of which four are to scientists working in North Carolina. These grants to individuals bring the total research funds sent to this state by the American Heart Association to approximately $45,000. In addition, the North Carolina Heart Association has made a special grant to Dr. W. C. Sealy, thoracic surgeon at Duke Hospital.

The list of grants to North Carolina institutions and individuals is as follows:

Chapel Hill—University of North Carolina School of Medicine

Dr. C. Bruce Taylor, investigator. Evaluation of the Macacus rhesus monkey as an experimental animal for the production of atherosclerosis, including studies on cholesterol metabolism.

Durham—Duke University School of Medicine

Dr. James V. Warren, investigator. Response of blood vessels in the lungs to circulatory disturbance.

Winston-Salem—Bowman Gray School of Medicine of Wake Forest College

1. Dr. Jerry K. Aikawa, investigator. Factors of immunity and their possible relationship to rheumatic fever.
2. Dr. Harold D. Green, investigator. Nature of constriction and dilation of the blood vessels.
3. Dr. C. Glenn Sawyer, investigator. Diseases of the pericardium, the membraneous sac surrounding the heart.

Extension of Established Investigatorships: (range of stipend, $6,000-$9,000).

Durham — Dr. Wilfried F.H.M. Mommaerts (biochemistry of muscular contraction).

Winston-Salem — Dr. Jerry K. Aikawa (immunophysiology).

Renewal Research Fellowship: (range of stipend, $3,500-$5,500).

Durham—Dr. Philip A. Khairallah (biochemistry of heart muscle proteins).

New Research Fellowship:

Durham—Dr. Robert F. Kibler (splanchnic circulation and metabolism).

North Carolina Society for Crippled Children and Adults

During 1950-51 Easter Seal sent over 26 children to camp, some for the first time. Crippled arms and legs do not slow one up in the water. Success in one activity sometimes inspires the handicapped child to greater effort in overcoming his or her handicap.

There are three camps in the state especially for handicapped children: Camp Sky Ranch in Blowing Rock, Riverside Park near Washington, and Crippled Children's Camp near Salisbury. Camp Sky Ranch, a privately owned camp, opens in July for two weeks' camping periods throughout the summer. For full information, rates, etc., write Mr. Marvin L. Culbreth, Secretary, Camp Sky Ranch, Blowing Rock, North Carolina. Riverside Park is a project of the Crippled Children's Section of the State Board of Health. Admission to this camp must be obtained through recommendation of orthopedic clinics in Eastern North Carolina. The

Crippled Children's Camp in Salisbury is operated by the Salisbury Kiwanis Club in cooperation with the Crippled Children's Section of the State Board of Health and the North Carolina Society for Crippled Children. Admission may be obtained only through the orthopedic clinic in Salisbury this year.

A number of other North Carolina camps will accept children with less severe handicaps.

North Carolina Tuberculosis Association

Miss Elizabeth Smith of Goldsboro, president of the North Carolina Tuberculosis Association, has announced the appointment of C. Scott Venable as the new executive secretary of the association. He succeeds Frank W. Webster, who resigned recently to become executive secretary of the American Trudeau Society.

Born in Chester, Pennsylvania, Venable attended the Episcopal Academy in Philadelphia, and was graduated from the University of North Carolina with a B.S. Degree in Commerce. For the past three years he has been employed by the North Carolina Tuberculosis Association as a field secretary in the western territory. Venable is a member of the National Conference of Tuberculosis Workers and has acted as advisor to the Rehabilitation Committee of the North Carolina Conference of Tuberculosis Secretaries.

He assumed his new duties with the association on June 1.

New Hanover County Medical Symposium

The name of Dr. R. L. Sanders, professor of surgery of the University of Tennessee, was inadvertently omitted from the program of the New Hanover County Medical Symposium, which appeared in the Bulletin Board for June. The complete list of speakers and their subjects is as follows: Dr. H. Hudnall Ware, Jr., professor of obstetrics, Medical College of Virginia—"Toxemia of Pregnancy"; Dr. Virgil P. W. Sydenstricker, professor of medicine, Medical College of Georgia—"Collagen Diseases"; Dr. Eugene P. Pendergrass, professor of radiology, University of Pennsylvania Medical School—"Cancer of the Lung with Comment Concerning Some of the Difficulties of Early Diagnosis"; Dr. Joseph Stokes, Jr., professor of pediatrics, University of Pennsylvania Medical School — "Recent Studies in Certain Viral Diseases"; Dr. R. L. Sanders, professor of surgery, University of Tennessee College of Medicine—"Surgical Lesions of the Colon."

Halifax County Medical Society

The Halifax County Medical Society held its regular monthly dinner and meeting at the Roanoke Rapids Hospital on Friday, June 13. Speaker of the evening was Dr. Julian C. Brantley, Jr., of Rocky Mount, and Dr. J. H. Cutchin, Jr., made the response.

Edgecomb-Nash Medical Society

The regular monthly meeting of the Edgecombe-Nash Medical Society was held June 11 at the Benvenue Country Club. The program was in charge of Dr. J. H. Cutchin, who presented as the speaker of the evening Dr. Robert Young, Halifax County health officer. Dr. Young spoke on "Recent Trends in Preventive Medicine and Public Health." An additional feature of the meeting was a report by the delegates from the society to the meeting of the Medical Society of North Carolina.

News Notes

The President and Fellows of Harvard College, at its three hundred sixteenth commencement June 19, 1952, awarded the honorary degree of Doctor of Science to Brigadier General James Stevens Simmons, U. S. Army Retired, Dean of the Harvard School of Public Health. The citation read by President Conant was as follows: "James Stevens Simmons, Physician, Bacteriologist, Army Medical Officer; as a General a vigilant guardian of the health of troops; as a Dean the imaginative rebuilder of the Harvard School of Public Health." General Simmons is a native of Alamance County, North Carolina, and has relatives in this state.

American College of Surgeons

Surgeons from all parts of the nation and a number of foreign countries will participate in the thirty-eighth annual Clinical Congress of the American College of Surgeons which opens at the Waldorf-Astoria in New York City September 22 and continues through September 26. Attendance at this largest scientific meeting of its kind in the world is expected to reach 10,000.

Recent developments in surgical and clinical techniques will be discussed in hundreds of reports by leading surgeons at this five day educational meeting. The program includes clinics, postgraduate courses, forums, panel discussions, color television, cine clinics, medical motion pictures, and scientific and technical exhibits.

American Board of Clinical Chemistry

The American Board of Clinical Chemistry, Inc., has, by amending the By-Laws, extended the period during which the Board will review applications for Certifications of Clinical Chemists without examination, from July 1, 1952, to December 31, 1952. Applications filed before the December date will be considered by the Board at subsequent meetings.

The fee for each application form was increased from $1.00 to $3.00, which will only partly defray the office expense involved in handling these forms. The application forms may be obtained from Jos. W. E. Harrisson, Sc.D., Secretary-Treasurer, American Board of Clinical Chemistry, Inc., 1921 Walnut St., Philadelphia 3, Pennsylvania, upon forwarding the fee and the name of the applicant as it is to be recorded.

News Notes from the American Medical Association

Of special interest to the medical profession is the short subject film—"Your Doctor"—now being released by RKO Pathe to theaters from coast to coast. This 17 minute film tells the story of the American Medical Association's contribution to modern medicine in the field of rural health and medical education. It will be available to all theaters through RKO Pathe distribution offices.

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The A.M.A.'s Council on Pharmacy and Chemistry announces that new editions of two of its major publications — **New and Nonofficial Remedies** and **Useful Drugs**—will be available this summer. The 1952 edition of **New and Nonofficial Remedies** retails for three dollars postpaid and **Useful Drugs** (15th edition) for $2.50 postpaid. Both may be secured through the publishers, J. B. Lippincott Company, Philadelphia, bookstores, or single copies through the A.M.A.'s Order Department.

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A new series of electrical transcriptions on industrial health will be available from the A.M.A.'s Bureau of Health Education July 15 for use by local radio stations. The 13 programs in the series point up various phases of the industrial health field.

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At its June meeting in Chicago, the A.M.A.'s House of Delegates refused to modify its interpretation of the status of osteopaths. A resolution which would have permitted physicians to teach in osteopathic schools was turned down by the House. It did recommend, however, that the Board of Trustees appoint a committee to meet with osteopathic leaders to discuss osteopathic education.

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The A.M.A.'s House of Delegates endorsed the stand taken previously by its officers in criticising the political motives of the President's Commission on the Health Needs of the Nation at its June meeting in Chicago. The Association believes that the commission was appointed in an adroit move to pull the question of socialized medicine out of the elections this fall.

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A progress report summarizing extensive research which is being conducted on federal medical services to dependents of servicemen and to veterans with non-service-connected disabilities, and the processing of patients between armed forces and veterans hospitals was submitted to the A.M.A.'s House of Delegates meeting in June. The special subcommittee expects to make a complete report, with specific recommendations, in December.

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The A.M.A.'s House of Delegates officially abolished fellowship in the Association at its June sessions in Chicago. Provision has been made for service, affiliate, and honorary fellowships to be incorporated in the membership classification. All candidates for membership in the Association will be screened by the Judicial Council prior to acceptance.

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The whole status of medical internship—including supply and demand— is being re-studied by a special committee under the auspices of the A.M.A.'s Council on Medical Education and Hospitals. Dr. Victor Johnson, director of the Mayo Foundation for Medical Education and Research, is chairman of the committee which is made up of outstanding leaders in the hospital field throughout the United States.

American Heart Association

Scientific investigators of three nations who have been studying the comparative value of treating rheumatic fever with one of the hormones, ACTH or cortisone, or with aspirin, have announced that although the acute symptoms of this disease usually subside with all three agents, no clear difference was as yet apparent in the rate of completeness of this improvement.

The report stated, "Although individual symptoms may appear to be affected more favorably by one or another of these drugs, no consistent pattern is evident which would allow any conclusion concerning the drug most effective for control of the acute illness."

It was pointed out that the results reported upon did not include any information on "the crucial question" of the comparative effectiveness of the three drugs in preventing chronic heart disease, which frequently follows rheumatic fever. The study will continue in an effort to arrive at an answer to this "important problem."

The cooperative rheumatic fever study, first of its kind in this field, is being conducted at 13 research centers in the United States, Great Britain and Canada. A central coordinating center is located in New York City. The preliminary report of its findings was presented at a joint scientific session of the American Heart Association's Council on Rheumatic Fever and the American Rheumatism Association on Saturday, June 7, at the Conrad Hilton Hotel in Chicago.

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An annual award to be known as the Howard W. Blakeslee Award, has been established by the American Heart Association to encourage high standards of medical reporting in all media of developments in the field of heart and blood vessel diseases, according to an announcement by Dr. Irving S. Wright, president of the association. Dr. Wright explained that the award was named in honor of Mr. Blakeslee, who recently died of heart disease, because of "his outstanding contributions toward raising the level of scientific reporting."

Mr. Blakeslee was science editor of the Associated Press. He was a founder of the National Association of Science Writers, which officially endorsed the award at its annual meeting in Chicago recently.

As approved by the American Heart Association's Board of Directors, the Howard W. Blakeslee Award will be presented annually to the individual whose creative efforts in any medium of mass communication—including press, magazines, radio, television, films and books—contribute most to public understanding of the cardiovascular diseases.

National Society for Crippled Children and Adults, Inc.

Eighteen outstanding professional persons, representing every section of the United States as well as Canada and Switzerland, have been named winners of important graduate fellowships for special training as employment and placement counselors for cerebral palsied and other severely crippled persons, Lawrence J. Linck, executive director of the National Society for Crippled Children and Adults, the Easter Seal Society, announced recently.

The fellowships, sponsored jointly for the fourth consecutive year by the National Society and Alpha Gamma Delta, international women's fraternity, are for a four week training course at the Institute of Physical Medicine and Rehabilitation of the New York University-Bellevue Medical Center, July 7 through August 1.

United States Atomic Energy Commission

On July 1, 1952, the United States Atomic Energy Commission began charging 20 per cent of production costs for radioisotopes used in the study, diagnosis, or treatment of cancer, thus ending its former policy of making radioisotopes available for cancer studies and treatment free of charge for production costs. More than $1,400,000 worth of radioisotopes have been distributed under this program since 1948. Users have paid transportation and handling costs, but the cost of production has been borne by the AEC.

DEPARTMENT OF THE ARMY

The Army Medical Service will celebrate its one hundred seventy-seventh anniversary on Sunday, July 27, 1952.

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The Army Medical Service will conduct 17 short postgraduate courses in surgery, psychiatry, and other subjects of major medical importance during the last six months of 1952, the Department of the Army has announced.

The instruction is open to both military and civilian physicians and is the broadest program of postgraduate professional training of this type ever sponsored by the Army Medical Service, according to Major General George E. Armstrong, MC, Army Surgeon General. The courses will be given at six large Army teaching hospitals and the Armed Forces Institute of Pathology in Washington, D. C.

* * *

New plastic bags may replace glass bottles as containers of whole blood for military use if current tests by the Army Medical Service confirm that the plastic holders facilitate transfusions and substantially reduce the bulk of shipments.

Major General George E. Armstrong, MC, Army Surgeon General, announced recently that the plastic containers had proved equally valuable in both field trials and hospital use. Blood packaged in the 6 x 8 inch bags occupies only one half the space required by glass bottles now in use and can be air-dropped to troops in combat without breakage.

Physicians at Brooke Army Medical Center, Fort Sam Houston, Texas, and Walter Reed Army Medical Center, Washington, D. C., report that arterial transfusions are easier and safer to give when whole blood can be forced into the patient's bloodstream by direct hand pressure on the plastic container. This eliminates the need for special apparatus to build up pressure with the attendant danger of air entering the system.

The bags are also used for collecting blood from donors at the test centers. Although they do not have the vacuum pull incorporated in the bottles, the plastic units can fill in eight to 16 minutes with the aid of gravity and the donor's muscular efforts.

Air shipment of whole blood to Korea and other oversea areas will be greatly facilitated because of the small weight and bulk of the plastic containers compared to the glass bottles. Storage of the empty bags will require one quarter of the space occupied by the glass bottles.

Each bag comes collapsed around 75 cc. of anticoagulant, ready to receive blood from a donor. One type comes with donor tubing attached which may be used as a hanging device; a second has a measuring device on its side to indicate the amount of blood it contains.

* * *

A team composed of two Army medical officers and a civilian physician left Friday, June 20, for Korea to evaluate the use of Dextran, a plasma volume expander, under battle conditions, the Department of the Army has announced.

Dextran, developed originally in Sweden during World War II, will not be used routinely in combat as long as the supply of whole blood and plasma is adequate to meet the demand. There is no substitute for whole blood and even plasma contains proteins, which dextran lacks.

Dextran does, however, act as an expander to maintain volume in the circulatory system. It is made primarily of sugar, molasses, and beet juice. The armed forces and the Federal Civil Defense Administration would probably have to rely on one of the plasma expanders now being investigated in the event of full-scale war or civilian disaster at home. The National Research Council has evaluated Dextran clinically and authorized the Defense Department to stockpile it as an emergency reserve. It has also been approved by the Federal Food and Drug Administration.

FEDERAL SECURITY AGENCY

Public Health Service

Dr. G. Halsey Hunt has been appointed an assistant surgeon general of the Public Health Service, Federal Security Agency, Surgeon General Leonard A. Scheele announced recently. He will serve as associate chief of the Bureau of Medical Services, which is under the direction of Dr. Jack Masur. Dr. Hunt was formerly chief of the Division of Hospitals.

The Bureau of Medical Services administers most of the direct medical care functions of the Public Health Service, managing its 22 hospitals located in major seaport cities and over 100 outpatient facilities. The Bureau also includes the Division of Foreign Quarantine, divisions concerned with medical, hospital, dental and nursing resources, and is responsible for the administration of the Hospital Survey and Construction Act.

(BULLETIN BOARD CONTINUED ON PAGE 360)

BOOK REVIEWS

Condensed Review of Pharmacy. By George W. Fiero. Ed. 7. 122 pages. Price, $3.25. New York: John Wiley and Sons, 1952.

For many years an invaluable aid to pharmacists, doctors, nurses, and students preparing for examinations, **Condensed Review of Pharmacy** by George W. Fiero, has been published in a new seventh edition by John Wiley and Sons.

A complete compendium of drugs, chemicals, and pharmaceutical preparations, Dr. Fiero's book opens with a preparatory review of practical pharmaceutical operations, calculations, and abbreviations. The following section, on Galenical pharmacy, covers such official preparations as syrups, lotions, liniments, tinctures, tablets, powders, and ointments. Vegetable and animal drugs; assayed drugs; active plant constituents; biologic preparations; and organic and inorganic chemicals are treated in the author's section on Materia Medica. The volume also includes sections on toxicology and elementary chemistry.

Dr. Fiero, who is with the manufacturing department of the Esso Standard Oil Company, has checked his revision against the latest editions of the United States Pharmacopeia and the National Formulary to bring his volume thoroughly up to date. A convenient column arrangement has been used to present the material.

Congenital Malformations of the Heart. By Helen B. Taussig. 618 pages. Price, $10.00. New York: The Commonwealth Fund, 1947.

Dr. Taussig, an associate professor of Pediatrics at Johns Hopkins University, has made an outstanding contribution to the field of congenital heart disease. The plan which she has followed in writing this book is a sound one. The first part of her book deals with the physiology of the malformed heart and the methods of diagnosis. In the second part she discusses malformations which deprive the body of an adequate amount of oxygenated blood. The third part deals with malformations which permit the body to receive an adequate amount of

oxygenated blood and thus allow life for many years. The fourth part is concerned with therapeutic measures. In view of the advancing field in cardiac surgery, this part will need frequent revisions.

One of the outstanding features of her book is the many color plates, diagrams, and x-ray reproductions. This method of presentation allows the clinician to grasp quickly the fundamentals of the various congenital malformations.

The book is an invaluable source reference for the practicing physician. Its one real disadvantage is its lack of conciseness. With a more orderly approach the book could have been considerably reduced in size without a loss of essential content.

Another limitation of this book for those actively engaged in congenital heart work is that the author has made no effort to correlate the clinical picture of the various disorders with the physiologic knowledge which has been recently gained through cardiac catheterization. Further discussion regarding recent surgical developments should also be included in the text.

Despite these deficits the book remains a worthy addition to the field of congenital heart disease.

Neurosurgery: An Historical Sketch. By Gilbert Horrax, M.D. 142 pages, 69 illustrations, 181 references. Price, $3.75. Springfield, Illinois: Charles C Thomas, 1952.

This is a short, concise treatise on a subject which could fill, literally, hundreds of pages. It has been written by a master in the field of neurosurgery, one whose active neurosurgical life has covered the recent 30 years during which most of the advance in the field of neurosurgery has been made. It is therefore of considerable value in its contribution to the accuracy of historical facts.

There is a brief account of the ancient history of neurosurgery which is purposely incomplete, the reader being referred to more complete volumes on this subject. The more recent development of the field of neurosurgery since the time of Horsley, covering the days of Cushing, Dandy, and others, is given in detail, together with the author's own valuable comments about the importance of each contribution. The illustrations are well chosen, there are unusual photographs of some of the foremost contributors to the field of neurosurgery, and the book is so written as to be of interest even to the casual reader. To those devoting their lives to neurology and neurosurgery, it will stand as a significant contribution by a man who has a broad perspective in the field of neurosurgery. The book itself reflects the usual excellent quality of Charles C Thomas publications.

Textbook of Clinical Neurology. By Israel S. Wechsler, M.D. Ed. 7. 801 pages. Price, $9.50. Philadelphia and London: W. B. Saunders Company, 1952.

The latest edition of Wechsler's standard text on neurology has minor additions, including electroencephalography, special forms of psychological examination, and especially the treatment of infections of the nervous system. However, the general form of the book and its approach have not been significantly changed. It comprises a reasonably complete, cursory review of the method of history taking and the neurologic examination, the major organic syndromes and diseases of the nervous system, the neuroses, and the history of neurology.

In general, the approach is primarily descriptive. In this connection there is an unfortunate tendency to list in detail the symptoms to be anticipated in a given disease without correlating this too closely with the basic physiologic mechanism responsible for the development of these symptoms. This tendency is most strikingly evident, for example, in the discussion of the convulsive state. The description of **grand mal, petit mal,** and psychomotor seizures is given in some detail, but nothing is said concerning the detailed studies of Penfiels and others relative to the relationship between the seizure pattern and locus of origin of the abnormal discharge.

The book presents a brief, concise, up-to-date review of the principle neurologic disorders. From a descriptive point of view it is accurate and moderately complete. As a reference text, it is inclined to be lacking in analysis and correlation of the clinical, pathologic, and physiologic findings.

Long Established Philadelphia Publishing House Will Move to New York

The Blakiston Company, medical and scientific publishers in Philadelphia for over one hundred years, will leave its Walnut Street headquarters in late summer of 1952 and move to 575 Madison Avenue, New York 22, where it will occupy offices with its parent organization, Doubleday and Company, Inc.

The move was announced by Frank Egner, recently appointed General Manager of Blakiston. Mr. Egner, a member of the Doubleday executive staff, was former president of Funk and Wagnalls and for many years a vice president of the McGraw-Hill Book Company.

In his announcement Mr. Egner said, "This move will give Blakiston closer working arrangements with the whole Doubleday organization and will afford Blakiston books greatly increased sales, production. and editorial facilities. The forward-looking Blakiston editorial program—aiming to keep abreast of the new trends in teaching techniques in all branches of the medical sciences, including dentistry, pharmacy, and veterinary medicine, and also such subjects as are embraced within the scope of chemistry, physics, zoology and botany, including agriculture—will be further strengthened by the development of a number of notable new textbooks planned and projected to meet current needs."

Mrs. Eunice Stevens has been appointed editor-in-chief and James B. Lackey continues as science editor. Gilbert S. Cooper continues as sales and business manager and Miss Laura E. Moore and Willard T. Shoener continue as manuscript editor and production manager respectively.

Overseas Institutions Welcome "CARE" Delivery of U. S. Pharmaceutical Book

Pharmaceutical and medical libraries in Europe and Asia have given grateful reception to a CARE Book Fund distribution of 1,000 copies of Remington's **The Practice of Pharmacy.**

Donors of the gift were E. Fullerton Cook and Eric W. Martin, the editors, and Mack Publishing Company, the publishers of this standard American pharmaceutical volume; the Philadelphia College of Pharmacy and Science, and Burroughs Wellcome and Company, Inc.

Their various contributions made it possible for CARE to obtain and deliver the books overseas. Sharing in the distribution, which had a retail value of $16,500, were pharmaceutical and medical schools and organizations, universities, research institutes, hospitals, and allied institutions in 16 countries.

BULLETIN BOARD

(CONTINUED FROM PAGE 358)

The Public Health Service of the Federal Security Agency announced today that during the first half of the current fiscal year 249 new research grants have been made to universities, hospitals, medical and dental schools, and other non-Federal research institutions to help support medical and scientific research activities.

The grants were made by the Surgeon General of the Public Health Service through the National Cancer Institute, the National Heart Institute, the National Institute of Arthritis and Metabolic Diseases, the National Institute of Dental Research, the National Institute of Mental Health, the National Institute of Neurological Diseases and Blindness, the National Microbiological Institute and the Division of Research Grants of the National Institutes of Health.

New grants were awarded to the following North Carolinians: Dr. T. Z. Csaky, University of North Carolina—A study of the metabolis and the physiological utilization and actions of methyl ethers of monosaccharides; Dr. Douglas George Humm, University of North Carolina—An investigation of a special respiratory system in the adrenal gland; Dr. Theodore B. Schwartz, Duke University—Evaluation of peptidase activity of surviving tissue; Dr. Albert G. Smith, Duke University—Studies on the cellular origin and development of chemically induced testicular tumors. Merrill P. Spencer, Bowman Gray School of Medicine of Wake Forest College—Circulation in the kidney.

* * *

Mutual rabies control programs and the prompt reporting of rabies cases in all animals were among the major recommendations made at the South Middle Atlantic Regional Rabies Conference, held recently in the Federal Security Building, Washington, D. C.

The conference was called by the Public Health Service staff of the Region III Office of the Federal Security Agency, and was co-sponsored by the Fish and Wildlife Service of the Interior Department and the Bureau of Animal Industry of the Department of Agriculture.

An Eastern Regional Rabies Council was established to develop plans and procedures to put the recommendations of the Conference into effect. This Council will be a continuing body representing all the states which took part in the conference.

Pointing to the continuing necessity for maintaining health safeguards, the conference stressed the need for dog immunization clinics and for the control of stray dogs. It called attention to the increase in rabies in the wild life in this area, particularly in foxes and skunks, and the increased dangers of infection in cattle and such domestic animals as cats and dogs.

Dr. Martin P. Hines, Chief of the Veterinary Public Health Section, North Carolina State Board of Health, was named Chairman of the Regional Rabies Council and Dr. Albert S. McCown, Director of the Bureau of Communicable Disease Control, Virginia State Health Department, was named Secretary.

* * *

Appointment of Dr. Norman B. McCullough as Chief of Clinical Research at the Microbiological Institute of the National Institutes of Health, Bethesda, Maryland, was recently announced by Surgeon General Leonard A. Scheele of the Public Health Service, Federal Security Agency.

The newly established unit which Dr. McCullough heads will conduct clinical investigations on infectious and tropical diseases at the National Institutes of Health's Clinical Center, now under construction and scheduled to open in the spring of 1953.

* * *

Children's Bureau

Parents who have been baffled by children's "endless questions," by the "mess, confusion, and clutter" they make of their homes, by the gang "loyalties" that get in the way of parental discipline, can get some help in understanding their youngsters from a publication just issued by the Children's Bureau. The publication is entitled "A Healthy Personality for Your Child."

Dr. Martha M. Eliot, Chief of the Children's Bureau, reported that the publication is a popular version of a part of the Fact Finding Report on healthy personality development which was prepared for the Midcentury White House Conference on Children and Youth, which met in Washington in December, 1950.

The original report was the product of a committee which included doctors, psychologists, anthropologists, social workers, clergymen, delinquency experts, lawyers, educators, and specialists in youth employment, recreation, and child development.

* * *

Useful information for parents who have a child with epilepsy, or whose child is hard of hearing, is contained in two new pamphlets of the Children's Bureau of the Federal Security Agency. The pamphlets are entitled "The Child with Epilepsy" and "The Child Who is Hard of Hearing." They are the second and third of a series by the Children's Bureau dealing with handicapping conditions of childhood. Already issued is "The Child with Cerebral Palsy."

Each of these pamphlets may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for five cents per copy.

VETERANS ADMINISTRATION

Funds to provide automobiles for seriously disabled veterans and to pay indemnity claims to dependents of deceased servicemen were made available to Veterans Administration in a bill signed by the President last month.

The Third Supplemental Appropriations Bill provides VA with more than $285,000,000 for veterans benefits which includes $25,000,000 for automobiles and $2,300,000 for servicemen indemnity claims. Also included in the Bill are $148,000,000 for subsistence and tuition payments for veterans receiving education or training under the GI Bill; $60,000,000 for compensation and pension payments; and $50,000,000 for extra-hazardous deaths under the National Service Life Insurance Act.

Funds to pay indemnity claims to dependents of servicemen and eligible veterans who died since the beginning of the Korean conflict have been exhausted since the latter part of April, 1952, when 7,553 claims had been approved for monthly payments. VA will make retroactive payments to those dependents.

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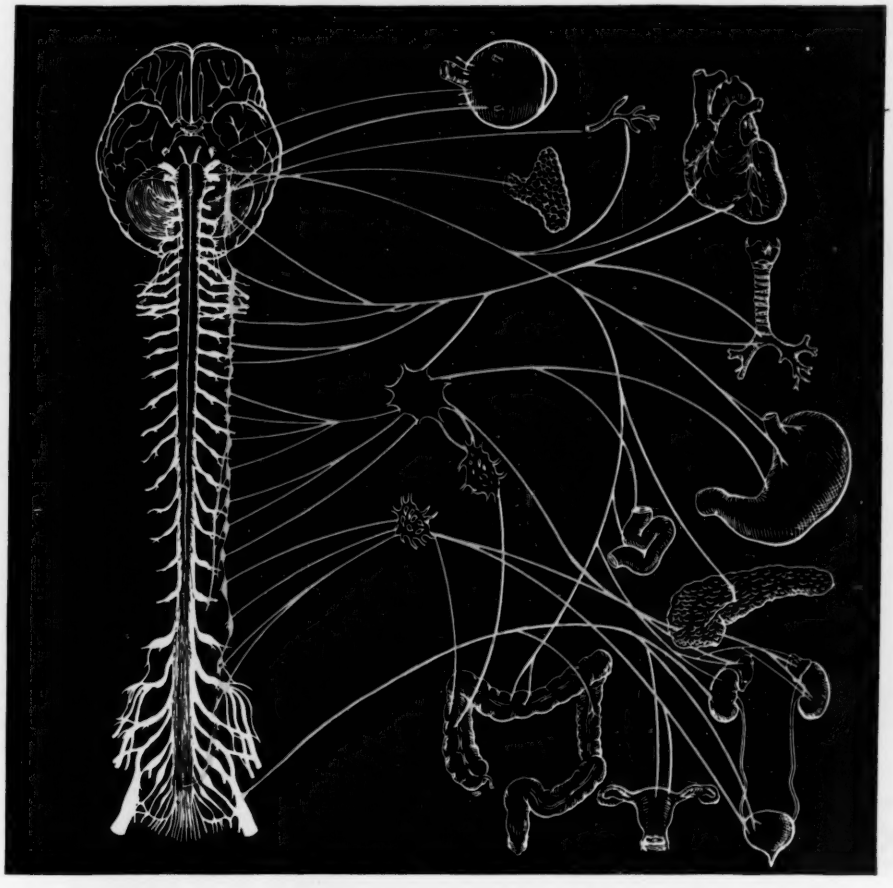

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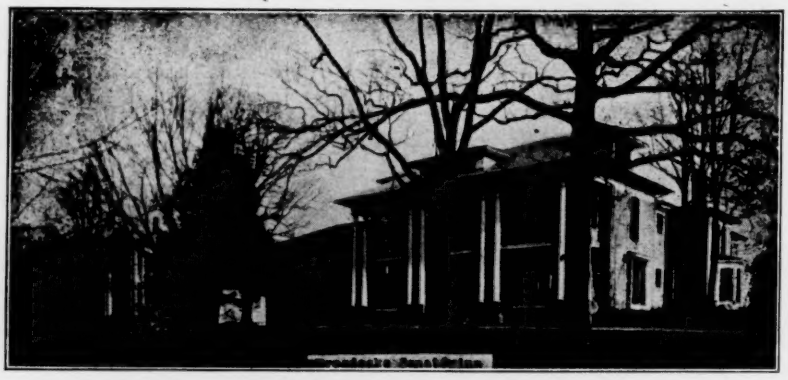

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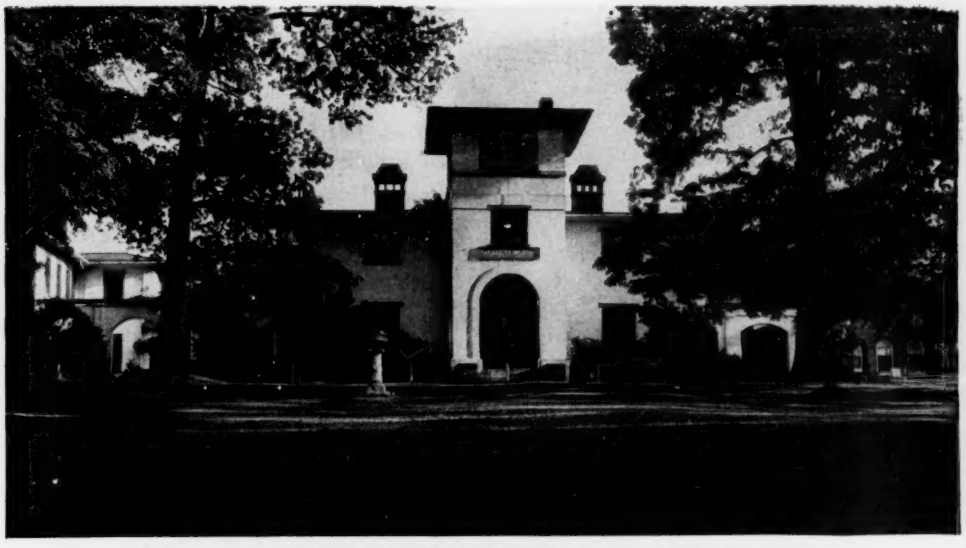

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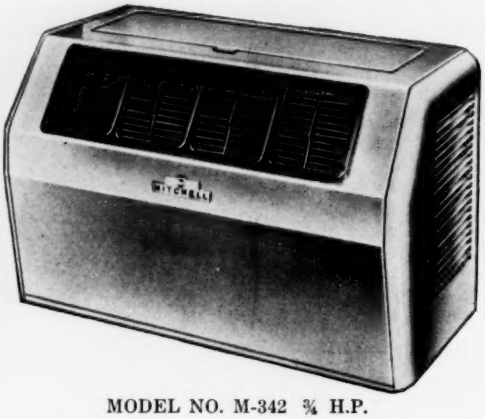

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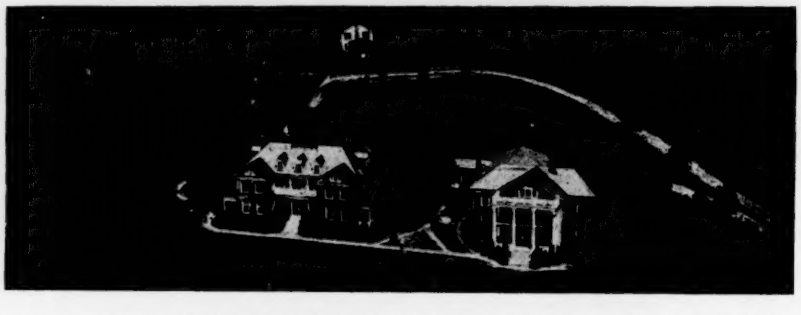

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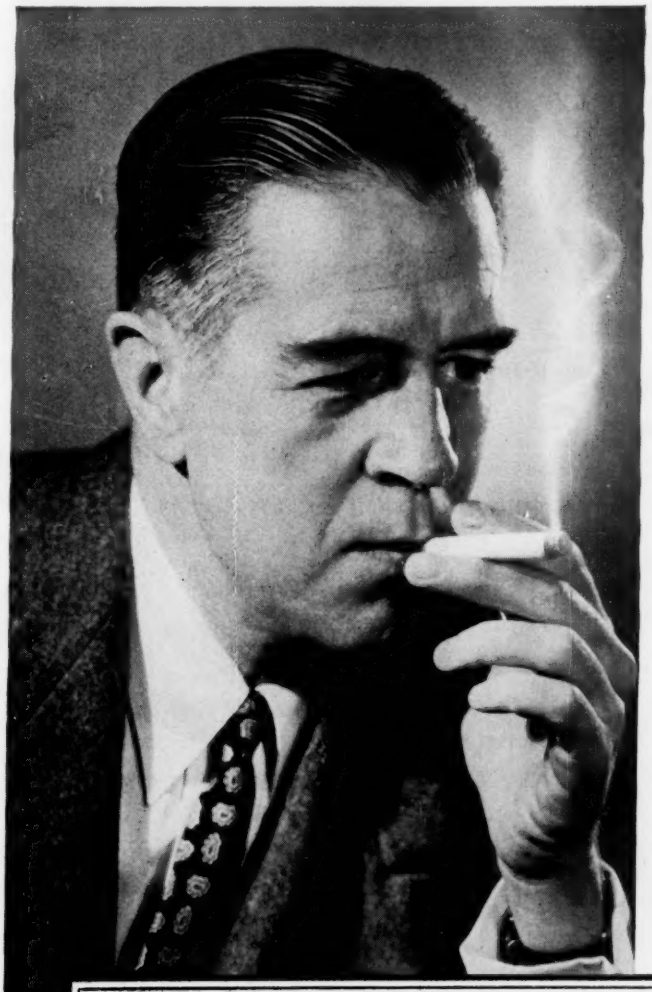

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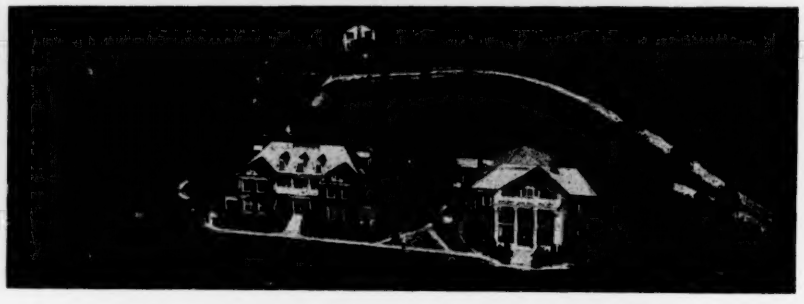

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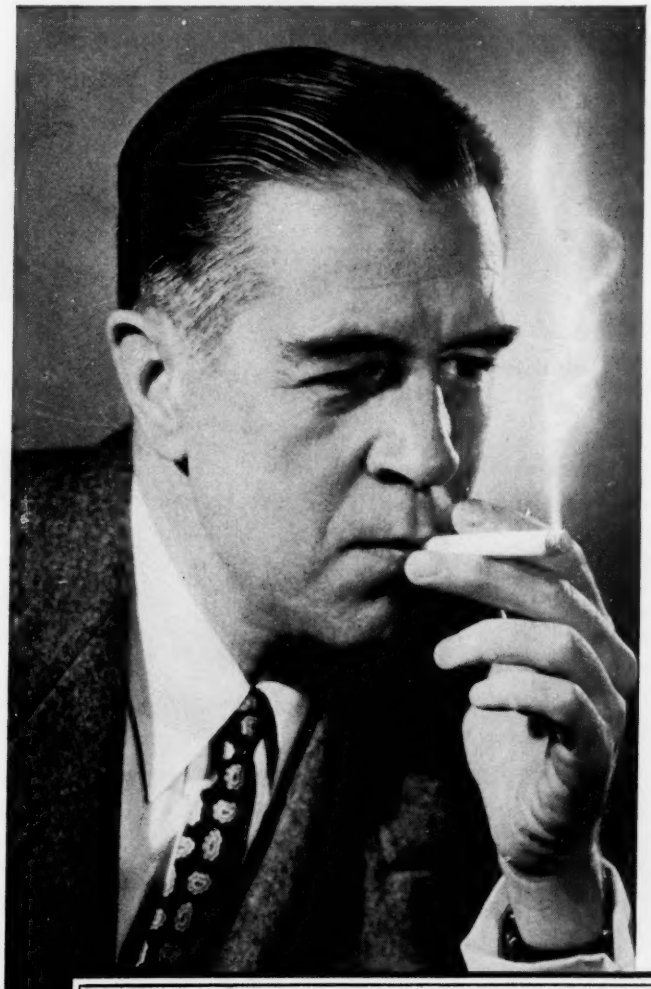

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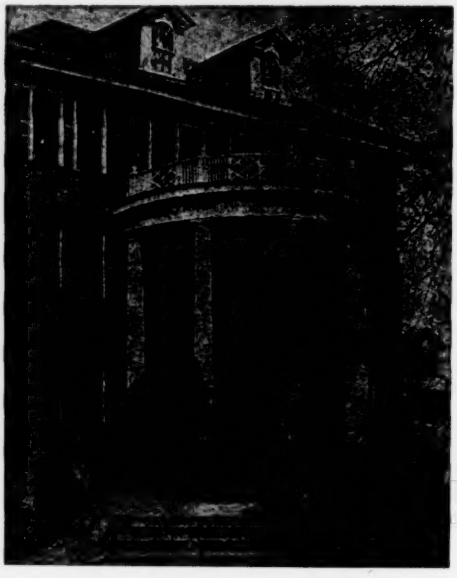

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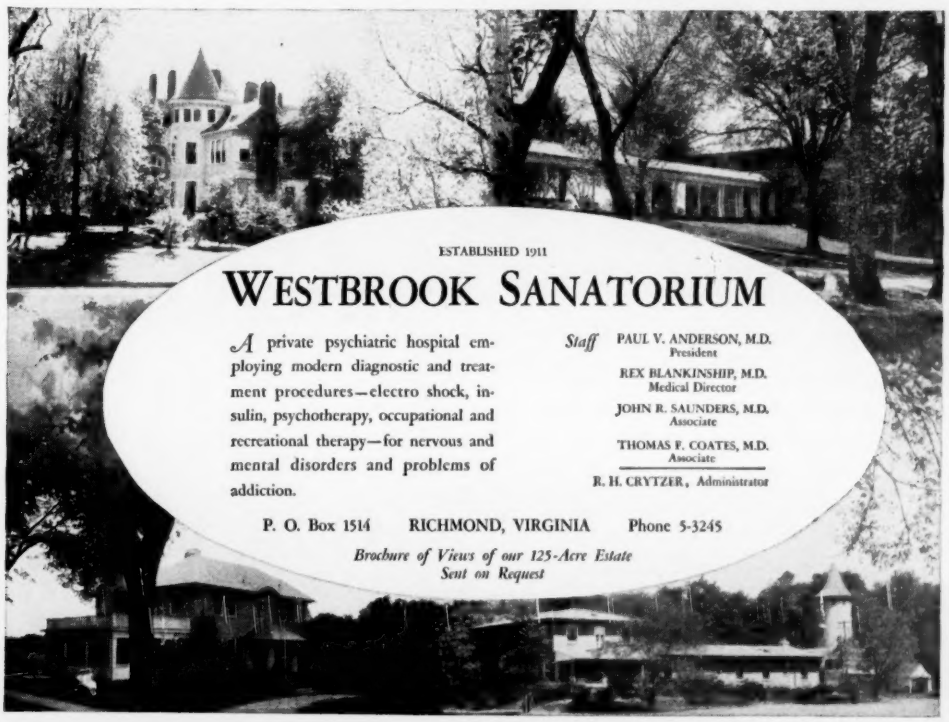
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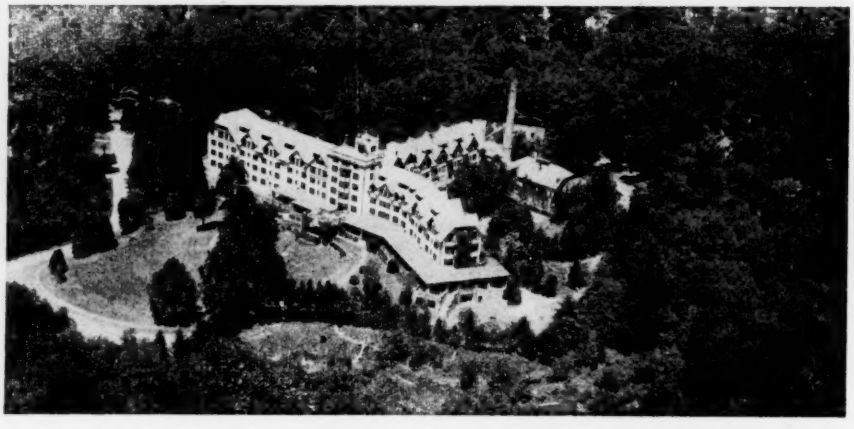

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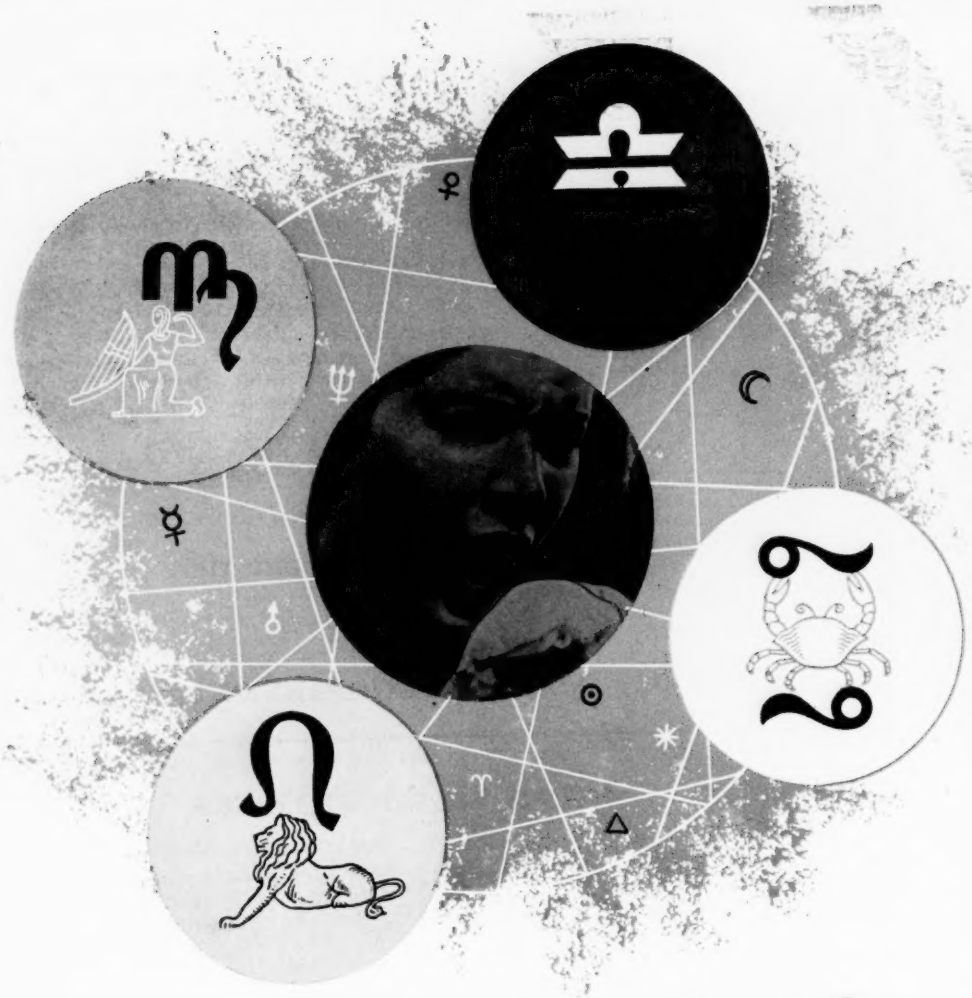

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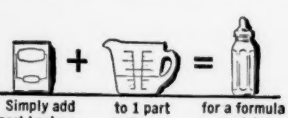

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